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**LISTS OF SPECIES**

# The herpetofauna of Sonora, Mexico, with comparisons to adjoining states

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## Abstract
Situated in the topographically complex transition between the Neotropics and the temperate biomes of North America, the state of Sonora, Mexico, has an extraordinarily diverse herpetofauna. Surprisingly little research has been conducted on the state's amphibians and reptiles and many systematic and biogeographic questions remain unanswered. To facilitate future research, we provide a checklist of Sonora's herpetofauna, documenting species presence based on museum specimens, our fieldwork, and published research. Sonora's herpetofauna is placed in a regional biogeographic perspective via a checklist for the six adjoining states together with faunal analyses. A total of 402 species of amphibians and reptiles are recorded from these seven states. Sonora has the greatest species richness (187 species), followed by Chihuahua (169 species), and Sinaloa (146 species). Sonora's herpetofauna is most similar to that of Chihuahua, with which it shares a long border. Eleven biogeographic affinity-based faunal groups are recognized. Of these, three are dominant in Sonora: a core group classified as "Sonoran" demonstrates strong affinity to Sonoran Desertscrub and Sinaloan Thornscrub communities; a Tropical group - with many species reaching their northern distributional limits in the state; and a Madrean group consisting largely of montane species. Our state-level faunal analysis provides some evidence of peninsular depauperization of the herpetofauna on the Baja California peninsula due in part to the small number of Neotropical species present in Baja California Sur. Our faunal analysis points toward distinctive mainland and peninsular Sonoran Desert herpetofaunas centered on Sonora and the Baja California Peninsula, respectively, each with about 50 non-insular species, and each with species-level endemism nearing 50%.

## Introduction
Sonora is the second-largest state in Mexico with a mainland territory spanning an area of 185,430 $km^2$ (Felger et al. 2001) between latitudes 26°16'49" N and 31°19'8" N (Figure 1; Table 1). Chihuahua (Mexico's largest state), the continental divide, and the Sierra Madre Occidental are situated near the eastern border. The Gulf of California and Sonora's 14 islands (Appendix 1) lie westward and comprise the state's western terminus.

Arizona and New Mexico border on the north, while Sinaloa lies to the south. The Tropic of Cancer crosses the 108th meridian ca. 318 km south of the Sonoran border near the eastern tip of Baja California Sur.

Van Denburgh (1922) and Slevin (1928) provided the first published lists of Sonora's herpetofauna. Legendary herpetologist Edward H. Taylor (1938) was the first to summarize the amphibians and reptiles. The best-known treatment of the herpetology of Sonora is that of Charles Bogert and James Oliver (1945). The most recent summary of Sonora's herpetofauna comes from Rorabaugh (2008). The present paper differs from Rorabaugh in that it (1) is regional in scope covering Sonora and all adjoining states; (2) uses the revised nomenclature published in Crother (2008) and Liner and Casas-Andreu (2008); (3) is inclusive of marine species and insular endemics; and (4) presents detailed discussion of species richness, faunal similarity, endemism and distributional limits among the bordering states in Mexico and U.S.

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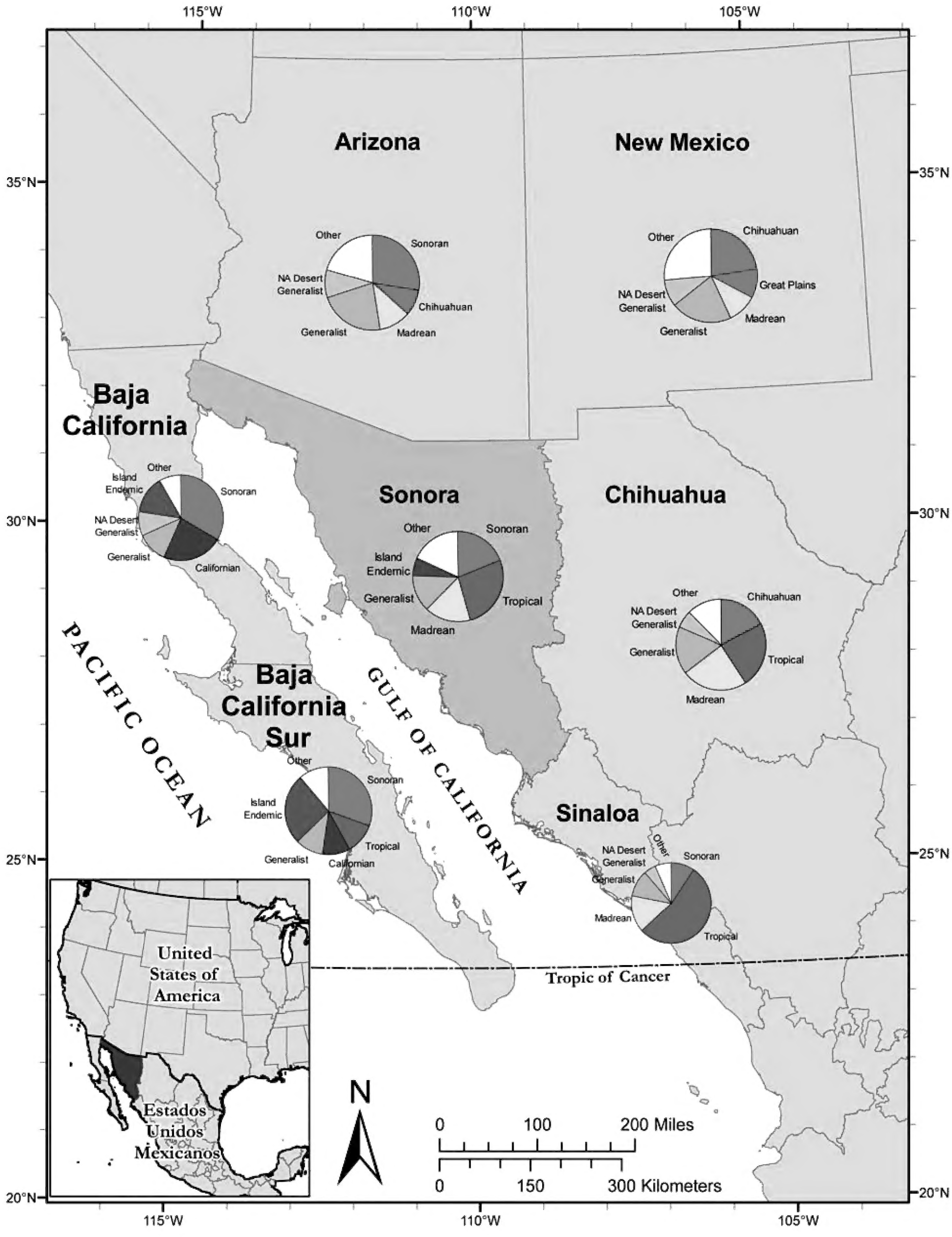


**Figure 1.** Map of the study area. Pie charts represent biogeographic affinities of the herpetofauna for each state, as explained in text.

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**Table 1**. Areas of the seven states included in this treatment of the regional herpetofauna.

| State | Land Surface Area ($km^2$) | % TOTAL Study Area |
|---|---|---|
| Arizona | 295,254 | 23.8 |
| BC | 71,576 | 5.8 |
| BCS | 73,475 | 5.9 |
| Chihuahua | 244,938 | 19.7 |
| New Mexico | 315,194 | 25.4 |
| Sonora | 185,430 | 14.9 |
| Sinaloa | 58,238 | 4.7 |
| TOTAL | 1,244,105 | |

### Materials and Methods

Scientific and standard English names used in this publication are based on the taxonomic lists published by Crother (2008) and Liner and Casas-Andreu (2008). Where these two checklists differed (e.g., in the recognition of *Syrrhophus*, *Sceloporus vandenburgianus*, and *Holbrookia approximans*) we followed the arrangement in the former. Taxa not included in the above lists, but added here are *Sceloporus albiventris* (Smith 1939), *Lampropeltis webbi* (Bryson et al. 2005), and *Tropidodipsas repleta* (Smith et al. 2005), as are species recognized in a recent revision of the *Trimorphodon biscutatus* complex (Devitt et al. 2008) and the *Xantusia vigilis* complex (Bezy et al. 2008), both appearing subsequent to the above two checklists.

Works consulted for construction of the initial state lists include: Grismer (2002a) - *Baja California* and *Baja California Sur*; Lowe (1964), Lowe et al. (1986), and Brennan and Holycross (2006) - *Arizona*; Degenhardt et al. (1996) - *New Mexico*; Bogert and Oliver (1945) and Schwalbe and Lowe (2000) - *Sonora*; Hardy and McDiarmid (1969) - *Sinaloa*; and Tanner (1985; 1987; 1989a) and Lemos Espinal and Smith (2007) - *Chihuahua*. Species presence and distribution in Sonora were verified by examination of preserved specimens and a review of published records.

It has been nearly four decades since the publication of the seminal work on the amphibians and reptiles of Sinaloa by Hardy and McDiarmid (1969), and we made a concerted effort to update the herpetofaunal list for this state, including a complete search of distributional records in Herpetological Review and an examination of all relevant species accounts in the Catalogue of American Amphibians and Reptiles. Other sources used to update the Sinaloa checklist include: McDiarmid and Bezy (1971), Frost and Bagnara (1974), McDiarmid et al. (1976), Smith and Smith (1976), Frost (1979), Robinson (1979), Berry and Legler (1980), Hillis et al. (1984), Webb (1984); Flores-Villela (1993), Good (1994), Seidel (2002); Flores-Villela and Canseco-Marquez (2004); Campbell and Lamar (2004), Bryson et al. (2005), Devitt et al. (2008), and Mulcahy (2008) .

We obtained data for Sonoran specimens of amphibians and reptiles in the following collections from curatorial staff (see acknowledgements) or via the HerpNET data portal (http://www.herpnet.org) on 13 May 2006 – 05 May 2007: California Academy of Sciences, Cornell University Museum of Vertebrates, Harvard Museum of Comparative Zoology, University of Kansas, Museum of Vertebrate Zoology, *Museo de Zoologia*, *Facultad de Ciencias* UNAM, Royal Ontario Museum, Sam Noble Oklahoma Museum of Natural History, San Diego Natural History Museum, Sternberg Museum of Natural History, University of Texas El Paso, and *Universidad Nacional Autonoma de México Instituto de Biología*.

We assigned each species to one of 11 biogeographic affinities (Table 2) based on the

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occurrence of the center and majority of its distribution within a particular biotic region. Biotic communities follow Brown et al. (2007), except in the Sonoran and Chihuahuan regions where we include adjoining or contained semi-desert grasslands, chaparral, and thornscrub. We note that although Sinaloan Thornscrub (86 % of which occurs in Sonora) is in some respects transitional between Sonoran Desertscrub and Sinaloan Dry Deciduous Forest, most of the characteristically Sonoran species occur in it. To avoid complicating the analysis, therefore, we have retained such species as "Sonoran".

Rosen (2007) found little evidence for a Mohave Desert herpetofauna distinct from that of the Lower Colorado River Valley subdivision of the Sonoran Desert, and for simplicity, we have included species with Mohavean affinities as "Sonoran" (McLaughlin 1992). Species that do not demonstrate a particular biotic region association and occur over a wide distributional range are labeled "generalist." Species that occur widely in two or more desert regions (particularly in both the Chihuahuan and Sonoran deserts) are classified as "North American Desert generalist".

Species that enter the region from the east, with the great bulk of their ranges in the eastern U.S., are classified as "eastern temperate" without further specification. Although these affinity definitions and assignments are not quantitative, we found them to be a useful tool for characterizing the herpetofauna. To minimize such problems, some species that could have been designated as North American Desert generalist (such as *Sonora semiannulata*) or Madrean (such as *Hyla arenicolor*), which utilize divergent environments (such as woodland and forest, and semi-desert grassland and desertscrub, in these two examples) were entered in the "Generalist" category (Table 2).

We used Jaccard's cluster analysis to measure biotic relationships per state and faunal similarities between Sonora and bordering states. Clustering procedures are based on the nearest-neighbor criteria. Principal Coordinate Analysis (PCO) of biotic affinity per state (as defined above) was performed using the Gower General Similarity Coefficient with data expressed as number of species per biotic affinity. All the analyses were carried out using the program MVSP Version 3.1 (Kovach 1999).

**Table 2**. Biogeographic affinities of herpetofauna in Sonora and adjoining states. Tabled values are the percentage of species in each state in the affinity category. Affinity categories are defined and described in the Methods section.

| Biogeographic Affinity | ARI | BC | BCS | CHI | NME | SIN | SON | TOTAL |
|---|---|---|---|---|---|---|---|---|
| **Californian** | 1.5% | 25.9% | 9.9% | 0.0% | 0.8% | 0.0% | 0.0% | 7.2% |
| **Chihuahuan** | 8.9% | 0.0% | 0.0% | 17.8% | 22.7% | 0.7% | 4.8% | 9.2% |
| **Eastern Temperate** | 2.2% | 0.0% | 0.0% | 2.4% | 9.4% | 0.7% | 0.5% | 3.2% |
| **Generalist** | 22.2% | 11.1% | 8.8% | 16.6% | 21.1% | 11.0% | 13.4% | 8.2% |
| **Great Basin** | 5.9% | 1.9% | 0.0% | 1.2% | 5.5% | 0.0% | 0.0% | 2.5% |
| **Great Plains** | 6.7% | 0.9% | 0.0% | 4.7% | 10.2% | 0.7% | 2.7% | 3.2% |
| **Madrean** | 11.1% | 0.0% | 0.0% | 23.7% | 10.2% | 15.1% | 16.6% | 11.6% |
| **Marine** | 0.0% | 5.6% | 6.6% | 0.0% | 0.0% | 4.8% | 3.7% | 1.7% |
| **NA Desert Generalist** | 9.6% | 9.3% | 4.4% | 6.5% | 9.4% | 4.8% | 6.4% | 3.2% |
| **Sonoran** | 27.4% | 45.4% | 58.2% | 4.1% | 8.6% | 8.2% | 25.6% | 27. 9% |
| **Tropical** | 4.4% | 0.0% | 12.1% | 23.1% | 2.3% | 54.1% | 26.2% | 22.1% |
| TOTAL | 135 | 108 | 91 | 169 | 128 | 146 | 187 | 402 |

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## Results and Discussion

*Species richness*

A total of 402 native species of amphibians and reptiles arrayed in 36 families are found in the region (Tables 2, 3; Appendix 2); six additional species are present but exotic to the area. Overall native herpetofaunal diversity (Table 3) is highest in Sonora (187 species), Chihuahua (169 species), and Sinaloa (146 species). Sonora has the highest number of species of turtles (15), lizards (64), and snakes (72), and the second highest number of frogs (32 in Sonora, 35 in Sinaloa) and salamanders (3 in Sonora, 4 in Chihuahua).

Sinaloa lacks a recent treatment of the herpetofauna, and we suspect it supports greater diversity than we indicate; however, it is likely less than that of Sonora and Chihuahua due to its lower physiographic diversity and smaller area (Table 1). Recent analyses that were restricted to Mexico's Pacific lowlands and interior valleys found that the tropical dry forests of Sinaloa had higher diversity than those of Sonora, consistent with a general and expected decline in species richness from south to north (Garcia 2006, Garcia et al. 2007).

Total species richness continues to diminish to the north, away from the high diversity of the tropics (Table 3; Figure 2), dropping to 135 and 128 species in the well-studied faunas of Arizona and New Mexico. It is lowest on the Baja California peninsula: 108 in Baja California and 91 in Baja California Sur. Excluding insular endemics (Table 4) reduces these values to 93 and 69, respectively.

There is a correlation between number of species and state area (Figure 2), but species richness in both Baja California and Baja California Sur are substantially lower than expected on the basis of area. This may be explained by peninsular species depauperization, which consists of a decrease in species diversity from the base to the tip due the spatial effects of peninsulas on immigration and extinction (Taylor and Regal 1978; Rosenzweig 1995). Application of this model to the Baja California peninsula has been contentious (Taylor and Regal 1978, Seib 1980, Busak and Hedges 1984, Wiggins 1999). Such disagreement is not surprising considering the peninsula's complex geological history (involving rifting from the mainland and hypothesized trans-peninsular seaways; summaries in Grismer 1994, Riddle and Honeycutt 1990, Riddle et al. 2000, Murphy and Aguirre Leon 2002, Riddle and Hafner 2006, Devitt et al. 2008, Mulcahy 2009) and its ecological and topographic diversity (e.g., the Sierra San Pedro Martir and Mediterranean climate in the north and San Lucan Dry Deciduous Forest and Sierra La Laguna on the cape).

**Table 3**. Total number of amphibian and reptile species in each state arranged according to taxonomic order.

| Order | ARI | BC | BCS | CHI | NME | SIN | SON |
|---|---|---|---|---|---|---|---|
| Caudata | 1 | 3 | 0 | 4 | 3 | 1 | 3 |
| Anura | 24 | 11 | 3 | 30 | 22 | 35 | 32 |
| Crocodilia | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Testudinata | 6 | 6 | 7 | 13 | 10 | 12 | 15 |
| Sauria | 52 | 49 | 49 | 51 | 44 | 35 | 64 |
| Serpentes | 52 | 39 | 32 | 71 | 49 | 62 | 72 |
| TOTAL | 135 | 108 | 91 | 169 | 128 | 146 | 187 |

**Table 4**. Insular and non-insular endemic amphibians and reptiles by state.

| | ARI | BC | BCS | CHI | NME | SIN | SON | TOTAL |
|---|---|---|---|---|---|---|---|---|
| Insular | 0 | 15 | 22 | 0 | 0 | 0 | 11 | 48 |
| Non-insular | 4 | 4 | 14 | 1 | 3 | 1 | 5 | 29 |
| TOTAL | 4 | 19 | 34 | 1 | 3 | 1 | 15 | 77 |

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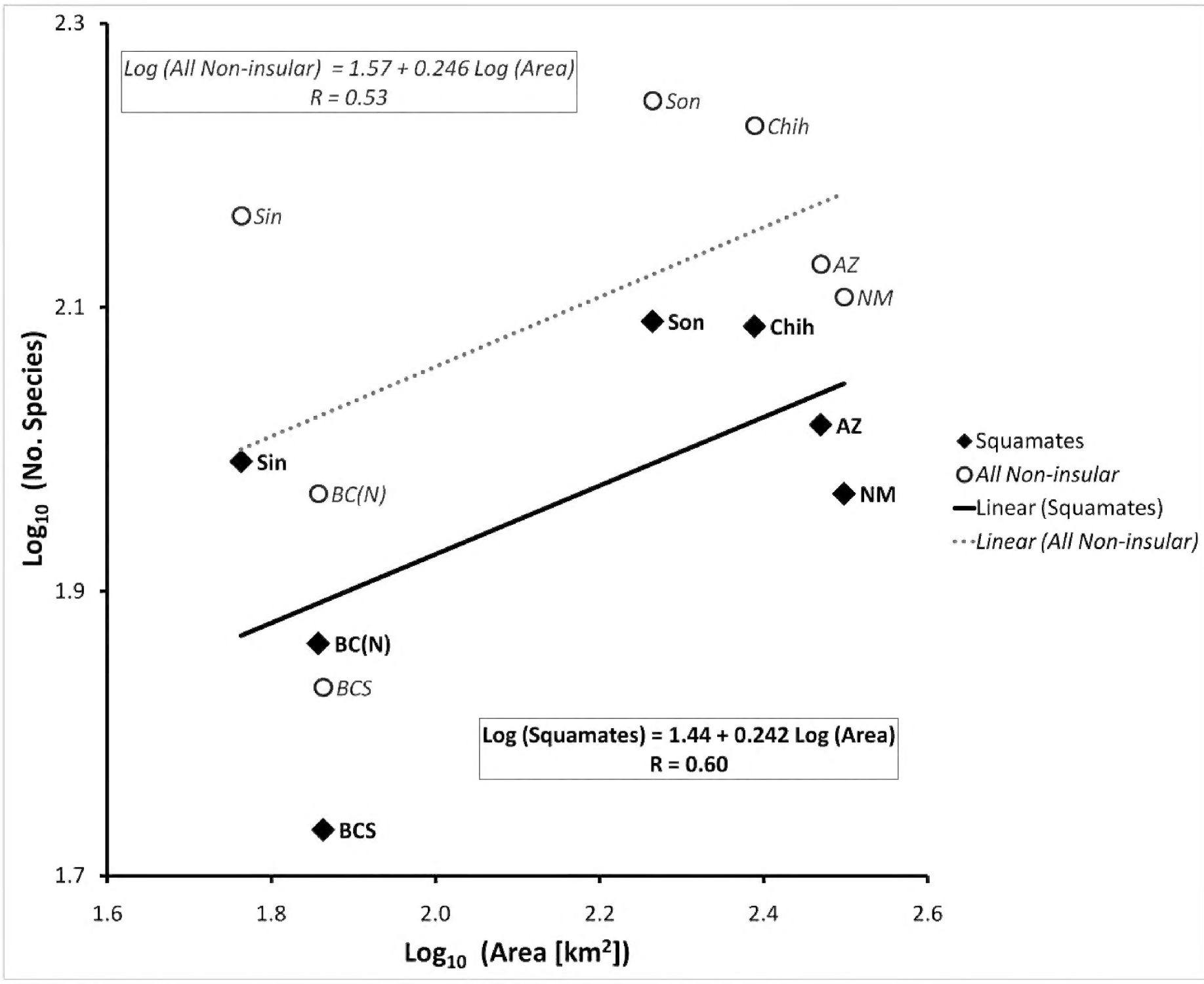


**Figure 2**. Logarithmic regression analysis of species/area relationship. Solid diamonds and continuous regression line represent all species of amphibians and reptiles; hollow dots and dotted regression line represent squamate species numbers. Species numbers do not include island endemics.

However, when considering only squamate reptiles (as in Seib 1980), we found evidence supporting a peninsular depauperization effect (Figure 2). This effect is almost entirely accounted for by the scarcity of tropical species (11 mostly endemic vicariant species in Baja California Sur), compared to 28 Californian-affiliated species in Baja California and 39 and 49 tropical species in Chihuahua and Sonora, respectively. The near absence of Neotropical species on the Baja California peninsula could reflect decreased migration from the mainland due to the arid conditions at the base of the peninsula and the large over-water dispersal distance. It may also reflect the peninsula's modest area of tropical vegetation and species extinction since separation from the mainland. These latter two factors, rather than the distance from source populations, most likely account for the apparent effect seen in Figure 2. However, considering the relatively low number of Sonoran-affiliated species (37 species in 4.4 million ha of Sonoran desertscrub for Baja California; 31 species in about 5.5 million ha of Sonoran desertscrub in Baja California Sur), and that Baja California Sur is at a lower latitude and would be expected to have higher species diversity for that reason, we cannot exclude the possibility of some form of peninsula depauperization. This is surprising in view of the extensive evolution of vicariant endemic species in Baja California Sur, and suggests further analysis at varied scales is required.

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*Faunal similarities*

Similarity indices based on species occurrences indicate Sonora is closest to its adjoining continental states, particularly to Chihuahua. However, it should be noted that the phenograms (Figures 3-7) are visual representations of descriptive biogeography and do not necessarily reflect historic biogeographical processess that are better inferred using reconstruction of phylogenies for species endemic to the sub-regions of the study area. Limiting our similarity analysis to species occurrence data, rather simply reflects geographic proximity. This is clearly shown by the two minimum spanning trees (Figures 5, 6), in which the relationships of the states closely mirror their geographical positions. Our analyses for species biogeographic affinities (Figures 4, 7) group Sonora with Sinaloa, Arizona with New Mexico, and Arizona-New Mexico with Chihuahua. These arrangements seem closer to underlying historical and ecological processes detailed below (see discussion under 'Biotic affinities'). Faunal similarity based on species presence-absence suggests Sonora is closest to Chihuahua for (a) total herpetofauna, (b) amphibians, and (c) snakes (Figures 3, 5). This is likely due to the long political border (ca. 800 km) shared between these two states. The Sierra Madre Occidental is near this border and many Madrean species occur in both states. In addition, many widespread North American Desert species are shared by both states, and several Chihuahuan Desert species reach northeastern Sonora (e.g., *Anaxyrus debilis, Phrynosoma cornutum, P. modestum, Sceloporus cowlesi, Aspidoscelis exsanguis, A. uniparens, Gyalopion canum*). Together these influences result in high faunal similarity values between Sonora and Chihuahua.

For turtles, with a very small species pool, Sonora clusters with Sinaloa and together these two ally with Baja California and Baja California Sur (Figure 3). Because the species pool is so small here, faunal similarity values can be explained by the distribution of a few species. These include tropical-affiliated species linking Sonora and Sinaloa: *Kinosternon alamosae, K. integrum, Rhinoclemmys pulcherrima* and *Terrapene nelsoni*. The anomalous similarity of Sonora to Baja California Sur is due to the presence of the shared *Gopherus agassizii* and *Trachemys nebulosus*, both of which might represent introductions to the southern peninsula (Grismer 2002), although, alternatively, turtle distributions may preserve evidence of the ancient attachment of the peninsula to the west coast of Mexico.

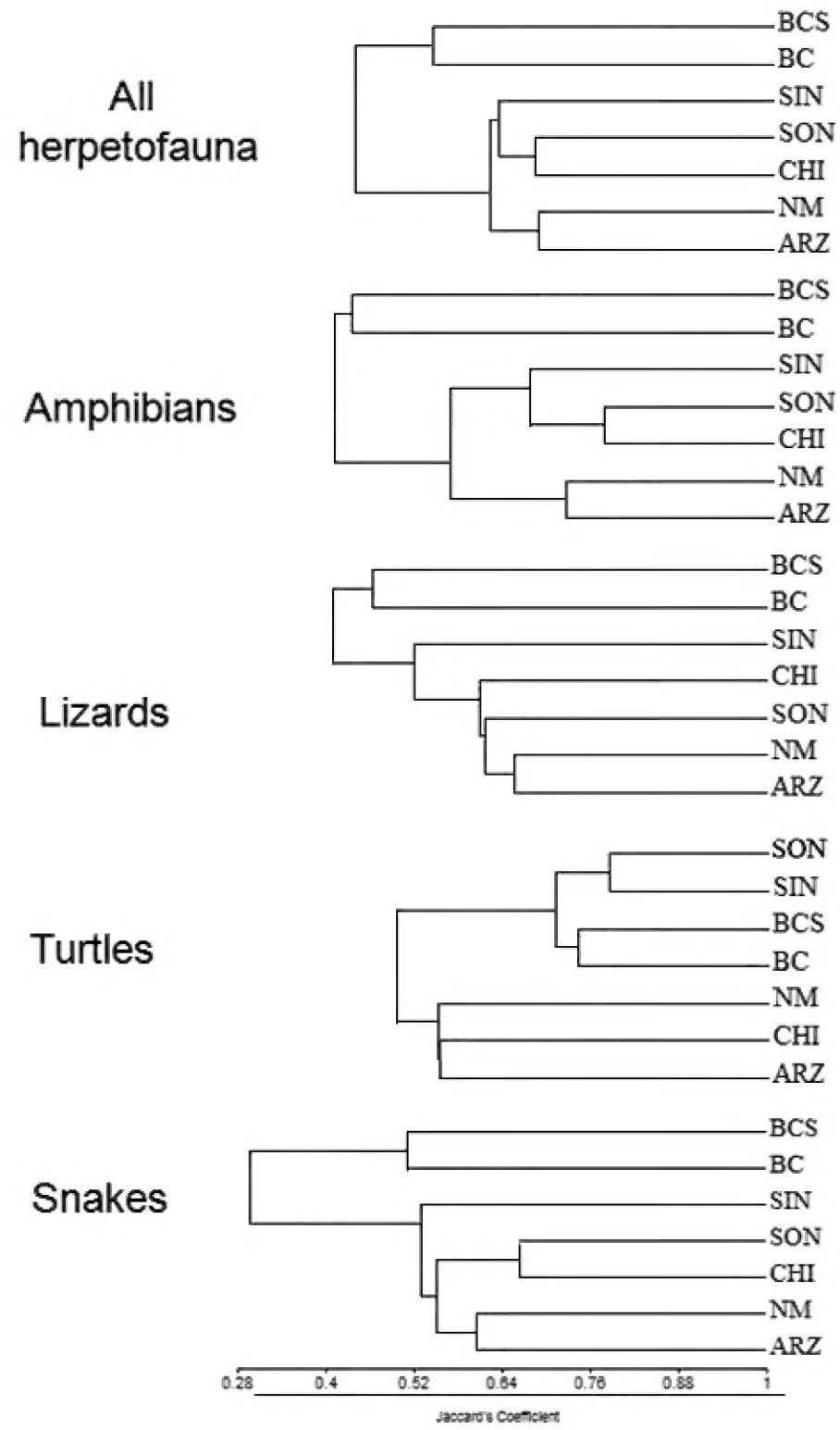


**Figure 3.** Jaccard's dendrogram measuring state herpetofaunal similiaries based on species occurrence (presence-absence).

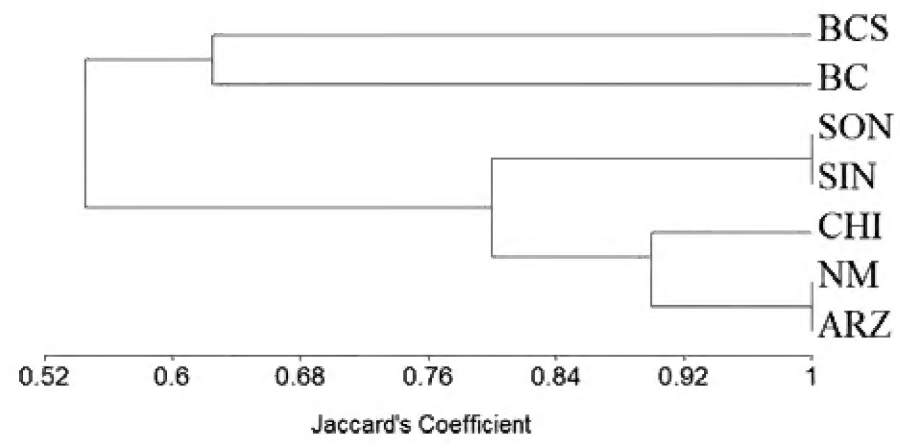


**Figure 4.** Jaccard's dendrogram comparing states according to biogeographic affinity of herpetofauna.

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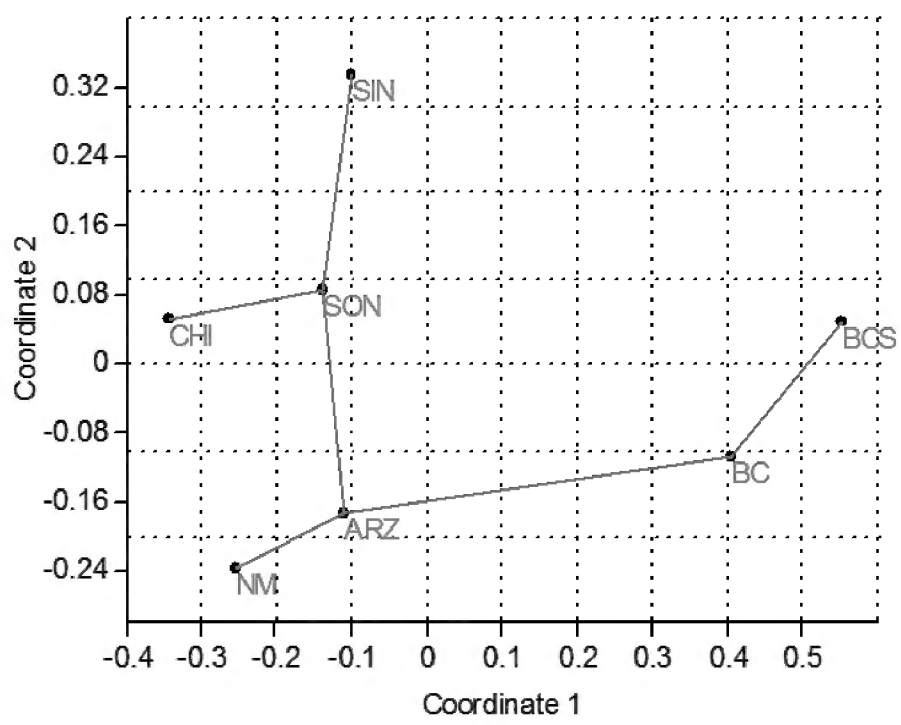


**Figure 5.** Minimum spanning tree from principal coordinate analysis of species occurrence (presence-absence) of all herpetofauna (Jaccard's distances).

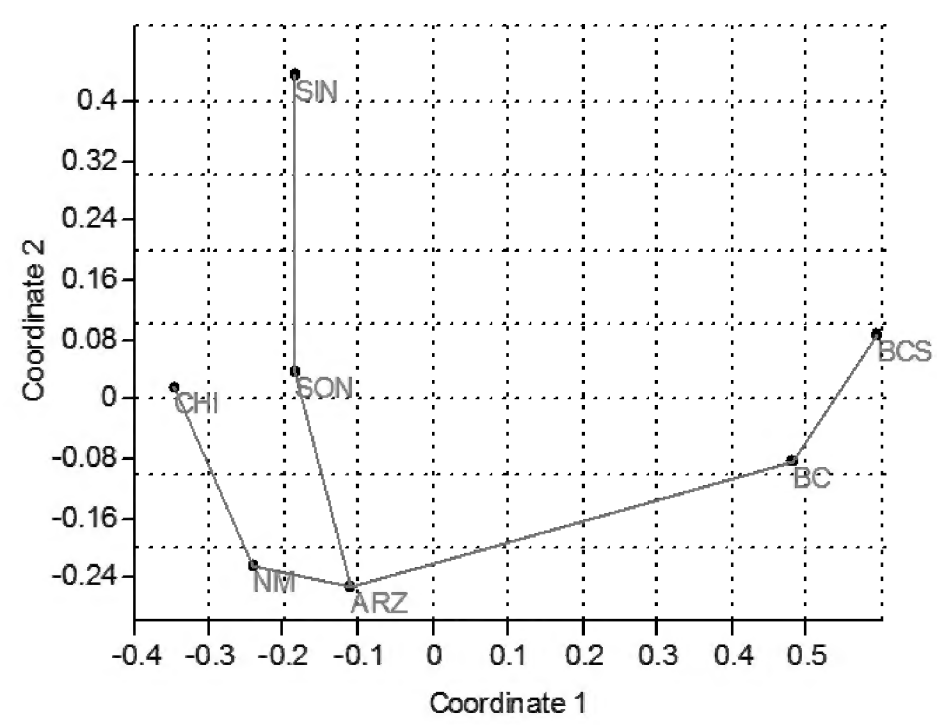


**Figure 6.** Minimum spanning tree from principal coordinate analysis of species occurrence (presence-absence) for lizards (Jaccard's distances).

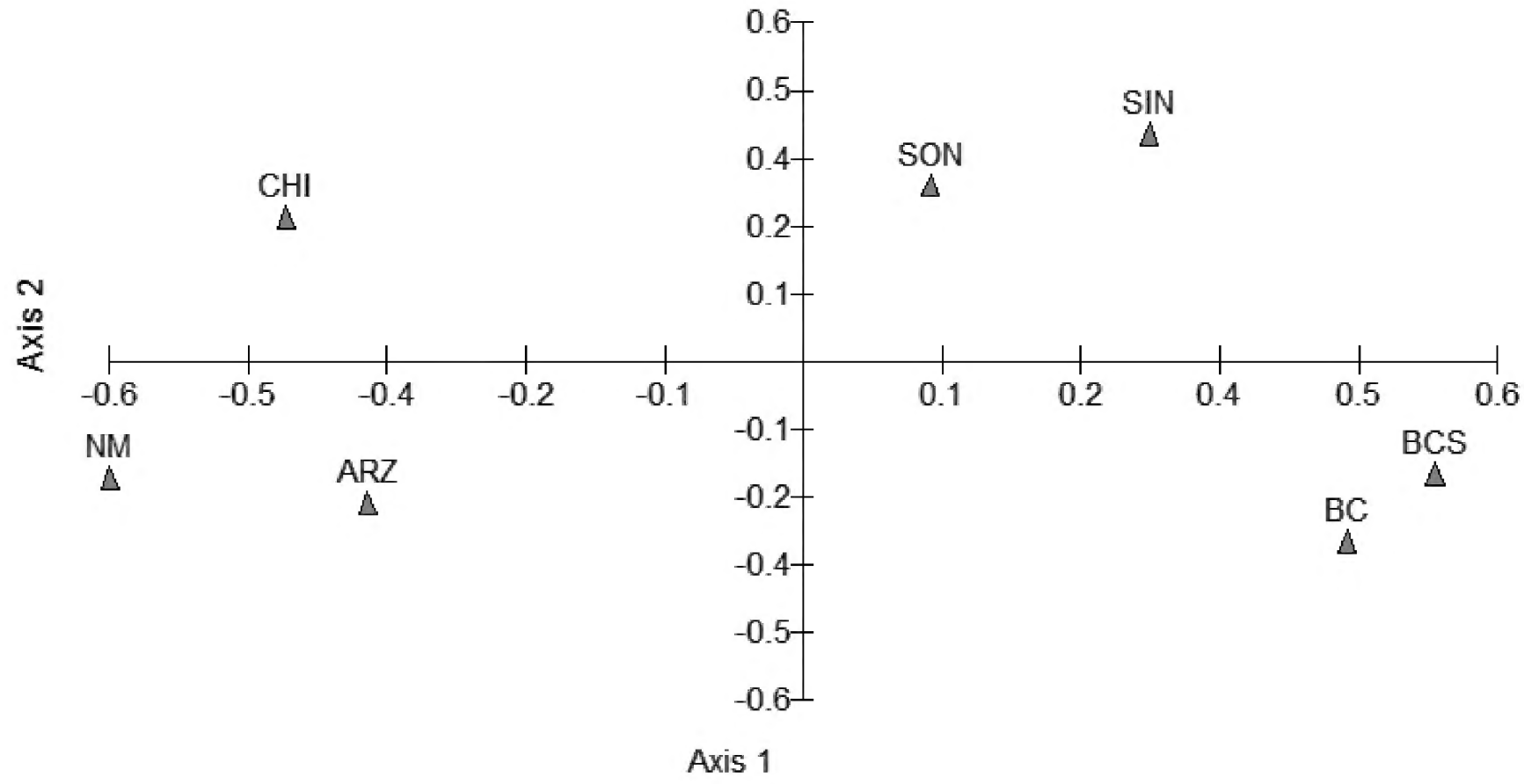


**Figure 7.** Principal coordinate analysis (PCO) of biogeographic affinity of the state herpetofaunas with each of the eleven categories expressed as number of species per affinity category for each state.

Sonora's lizards cluster with Arizona, New Mexico, and Chihuahua (Figures 3, 6). Lizards are quintessential desert vertebrates, and this clustering reflects the high species richness of lizards in the Sonoran and Chihuahuan Deserts present in all four states but less strikingly represented in the Neotropical dominated biota of Sinaloa (see additional discussion below under Affinities). Although the Sonoran Desert herpetofauna is only marginally present in New Mexico, several species shared with Sonora reach extreme southwestern New Mexico (e.g. *Phrynosoma solare, Heloderma suspectum*; see Lowe 1955).

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Our results (Figures 3-7) consistently indicate that the two states of peninsular Baja California group together and are distinctive from all the other states in the region. This pattern is consistent with regional biogeographical effects demonstrated by Riddle et al. (2000). It is not surprising considering the peninsula's high degree of isolation from the rest of the study area. Moreover, the entire peninsula is highly depauperate in anuran amphibians, its ecology being strongly dominated by arid environments supporting a notable array of unique reptilian endemics. Additionally, the boundary between the states crosses the ranges of many peninsular species. These include wide-ranging peninsular species as well as some formerly viewed as cape endemics, such as *Bipes biporus,* which range into the southern edge of the state of Baja California, and some former Baja California endemics, such *Aspidoscelis labialis,* are now known to reach Baja California Sur (summary in Grismer 2002).

Regardless, the herpetofauna of Baja California and Baja California Sur are quite distinctive as is reflected in the Jaccard's coefficient dendrograms (Figures 3, 4). Undoubtedly, the California affiliated faunal elements in Baja California, and the tropical affiliated species in the San Lucan Thornscrub and San Lucan Dry Deciduous Forest in Baja California Sur contribute directly to the distinctiveness of these two closely allied states.

*Biotic affinity*

Our interpretation of biogeographic affinity is largely based on a qualitative-discrete assignation per our regional experience and known species distributions within the floristic provinces defined in Brown et al. (2007). Of course, some species showed several biogeographic affinities that placed them in the category of generalists. The generalist assignation could be interpreted to a greater degree if we were to take into consideration the complete distribution of each species and its phylogenetic relationships.

Thus, the lack of distributional, phylogenetic, and geographical studies in the region further obscures biogeographic placement of certain species. Future studies accounting for historical-phylogenetic relationships may help refine biogeographic affinity and may also clarify the relationships we suggest here.

In Sonora, species with Sonoran Desert (26 %), Tropical (26 %) and Madrean (17 %) affinities dominate, whereas to the south in Sinaloa, species with tropical affinities account for 54 % of the fauna. To the east in Chihuahua, species with Madrean (24 %) and Tropical (23 %) affinities compose the greater part of the herpetofauna (Figure 1; Table 2).

Baja California and Baja California Sur (excluding insular species) support the highest proportion of species with Sonoran affinities (each with 34 %; Figure 1; Table 2), compared to only 27 % for Arizona, and 26 % for Sonora. The total number of species with Sonoran affinity in Baja California (37) and Baja California Sur (31) are similar to that of Arizona (37), and if island endemics are included, they exceed Sonora (47) in both the proportion and number of Sonoran-affinity species (Figure 1; Table 2). Despite the unique and distinctive elements in the species assemblage of the Baja Californian desert herpetofauna, this most likely represents nothing more than the strong area-dominance of Sonoran Desert in both peninsular states.

The similarity phenograms based on biotic affinity (Figure 4) produced strikingly different results from those based strictly on shared species (Figure 3). Analysis of biotic affinity produced a close association of Sonora and Sinaloa, whereas Arizona and New Mexico were closely associated and linked to Chihuahua. We believe these examples, based on our assignment of species biogeographic affinities, come closer to reflecting evolutionary and biogeographic processes underlying the structure of this regional assemblage of herpetofaunas, and suggest phylogenetic reconstructions to test this hypothesis.

Although Arizona shares many Sonoran species with the state of Sonora, and New Mexico has grassland and Chihuahuan affinities that connect it with Chihuahua, these two U. S. states share much with each other. They share high proportions of wide-ranging (Generalist) species, North

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American Desert Generalists, Great Basin, and Great Plains species, and they have relatively low proportions of Tropical and Madrean species. Chihuahua, like Sonora, has many Madrean and Tropical species, but is dominated by Chihuahuan Desert (Figure 1; Table 2). The Chihuahuan Biome shares species with the Great Plains (e.g., *Lithobates blairi*, *Thamnophis radix*, *Tropidoclonion lineatum*), and this tends to ally Chihuahua with the temperate zone and, thus, with Arizona and New Mexico (Figure 4).

Chihuahua and Durango, rather than Sonora, include most of the higher elevations of the Sierra Madre Occidental, producing an additional Chihuahua-to-New Mexico connection (e.g., *Opheodrys vernalis* and *Thamnophis sirtalis*) and to the more temperate U.S. states (Figure 3) via the shared biota of the U.S. Rocky Mountains and the highest elevations of the Sierra Madre. Although Sinaloa has a greater representation of tropical species than Sonora (54 % versus 26 %), these are nonetheless the two most tropical states in our study area, and they are closely similar in all other affinity categories (Figure 1; Table 2). Jaccard's dendrogram for affinity (Figure 4) and PCO using Gower's coefficient (Figure 7) both indicate a close association between Sinaloa and Sonora. This result is not surprising considering the principally subtropical evolutionary derivation of Sonoran Desertscrub and Sinaloan Thornscrub biota.

There is general paleobotanical agreement (Brown 1994) that Madrean Woodland, Sinaloan Dry Deciduous Forest, Sinaloan Thornscrub, Sonoran Desertscrub, and Mohave Desertscrub all share an ancient origin in the Madro-Tertiary Geoflora, a semi-arid formation that arose between Mesophytic (more tropical) and Arcto-Tertiary (more boreal) geofloras. There is also fairly general agreement that Sonoran Desertscrub is derived from Sinaloan Thornscrub, which in turn, is derived from Sinaloan Dry Deciduous Forest. Chihuahua and Sonora share an ancient Madrean heritage, but are in other important respects herpetofaunally and biogeographically divergent. We suspect that the derivation of species and gene clades of amphibians and reptiles may have followed along similar lines in this region, and that phylogenetic and phylogeographic analyses would yield tree topologies more similar to those of the Jaccard dendrograms for affinity (Figure 4) than comparisons based on shared species (Figure 3).

*Limits of geographic distribution*

The global latitudinal range of 66 species terminates in Sonora (Figure 8, Appendices 3, 4). The map illustrates that the distributional limits of species centered in the tropics (1) are concentrated in areas with greatest accessibility to herpetologists (Álamos and Yécora regions) and (2) diverge from the coast at higher latitudes. Species of tropical affinity reaching their northern limits in Sonora do so largely in moderate elevation zones of the Sierra Madre Occidental Archipelago. At higher latitudes, these species generally do not descend into warm, lower elevations (personal observations), presumably due to moisture requirements.

Eight species (7 %) of the Sonoran Desert-associated herpetofauna reach their southern range limits in Sonora, mainly near the coast (Figure 8), while the largest number (50 species, 27 %) do so in Sinaloa (Hardy and McDiarmid 1969), primarily in a progressively narrowing band of subtropical Sonoran Desertscrub and Sinaloan Thornscrub. Another large component of the herpetofaunal diversity is associated with the Sierra Madre Occidental (31 species, 17 %) and continues southward though Chihuahua and Durango (Webb 1984; McCranie and Wilson 1987; Lemos Espinal and Smith 2007). Three notable exceptions are *Aspidoscelis sonorae*, *Lithobates yavapaiensis*, and *Kinosternon arizonense*, which reach their southern limits on the western slopes of the Sierra Madre Occidental Archipelago in Sonora.

The transitions from Sonoran Desertscrub to Sinaloan Thornscrub, and thence to Sinaloan Dry Deciduous Forest, are suggested by these patterns in the latitudinal range limits of amphibians and reptiles. A more refined analysis of these transitions would be of great interest for understanding the ecological structure of the regional biota, its evolution, and its conservation.

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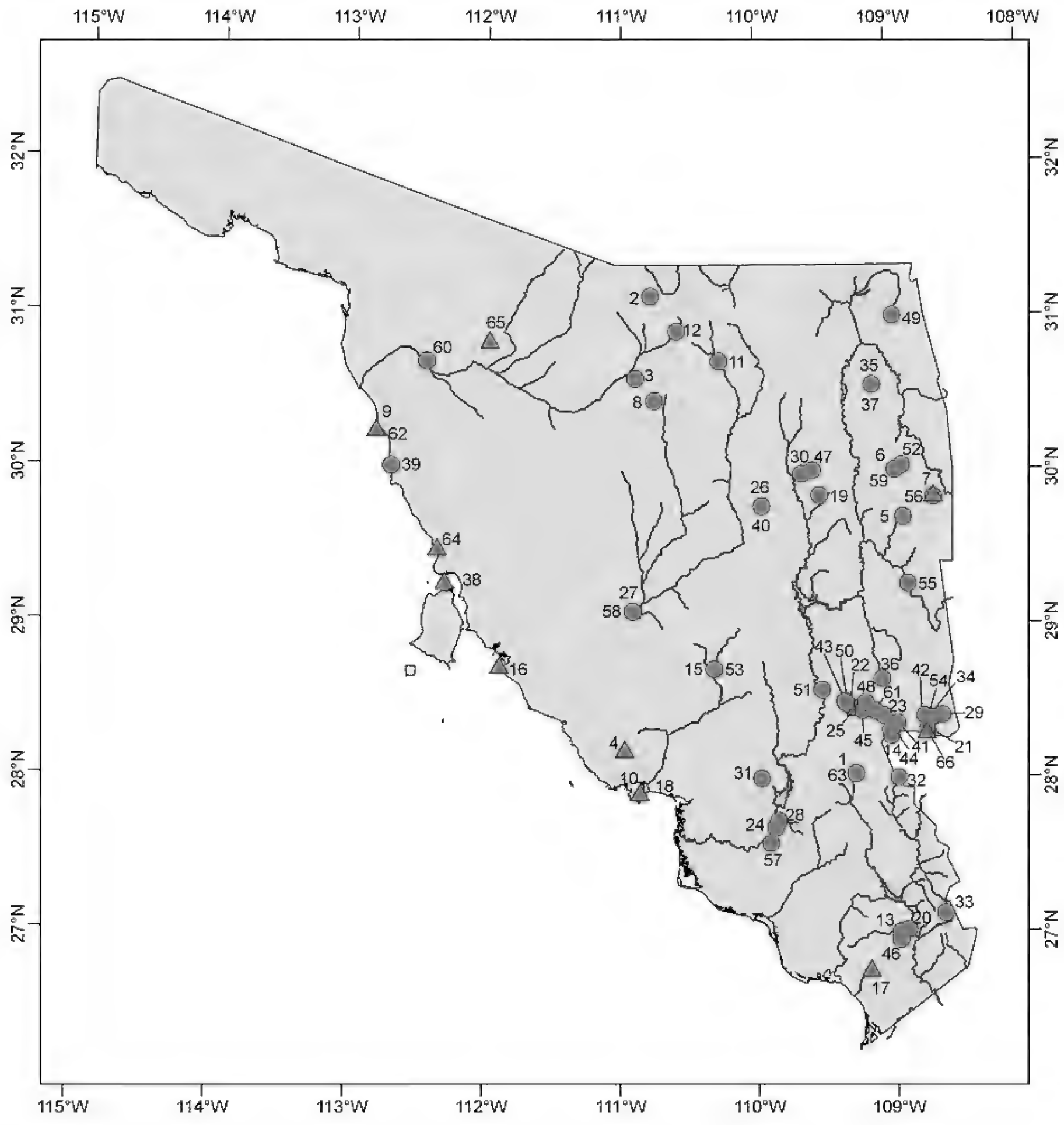


**Figure 8.** Species of amphibians and reptiles reaching their distributional limit in Sonora. Triangles represent localities where species reach their southern latitudinal limits as currently known. Circles represent localities where species reach their northern latitudinal limits as currently known. Sonoran endemics are not included. Species and localities are provided in Appendices 3 and 4.

*Endemism*

Despite the species richness of Sonora, it does not have an unusually high number of state endemics (Table 4). There are only five mainland endemics (four lizards: *Aspidoscelis opatae*, *Crotaphytus dickersonae*, *Phrynosoma ditmarsi*, *Xantusia jaycolei* and one turtle: *Trachemys yaquia*), similar to the figures for Arizona (4), Baja California (4), New Mexico (3), Chihuahua (1), and Sinaloa (1), but far less than that of Baja

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California Sur (14). The high number of endemics in Baja California Sur (Table 4) is a reflection primarily of the unique tropical and semi-tropical herpetofauna of the Cape region, the existence of the isolated Sierra La Laguna, and the historical separation of the cape region from the rest of the peninsula (Murphy and Aguirre-Leon 2002, Riddle et al. 2000, Grismer 1994). It is worth noting, however, that this state-by-state comparison may obscure the rich endemism comprising the region's core Sonoran Desert herpetofauna, which is centered on Sonora but importantly includes Arizona, Sinaloa, and the Baja California peninsula.

The Sonora herpetofauna includes 11 island endemics (9 lizards: *Aspidoscelis bacata*, *Aspidoscelis estebanensis, Aspidoscelis martyris, Ctenosaura conspicuosa, Ctenosaura nolascensis, Sauromalus hispidus, Sauromalus varius, Uta nolascensis*, and *Uta palmeri*; and 2 snakes: *Coluber slevini, Crotalus estebanensis*), notably fewer than Baja California (15) and Baja California Sur (22). This most likely reflects the greater number of islands included in Baja California and Baja California Sur compared to Sonora. Overall, it is clear that the greatest numbers of endemics in the region covered by this checklist involve the islands of the Gulf of California (Table 4). In addition to numerous recently derived species found on "land bridge" islands, these endemics include some remarkable ancient relicts: *Aspidoscelis ceralbensis, Sceloporus* (*Sator*) *angustus,* and *Sceloporus* (*Sator*) *grandaevus*.

The question thus arises whether the unique history of the Baja California peninsula, including its rifting from the mainland and its hypothesized trans-peninsular seaways has led to enhanced species diversity compared to the mainland. Here, we restrict this comparison to species we classify as having Sonoran and/or North American Desert Generalist affinities and exclude those classified as having Madrean, Tropical, Californian, and other non-desert affinities. In the count for Sonoran Desert endemics on the peninsula (Baja California + Baja California Sur) we include species that extend into southernmost California (south of San Gorgonio Pass), and for the mainland count (Arizona + Sonora + Sinaloa), we include species that enter extreme southwest New Mexico or extreme western Chihuahua. As thus defined, the Sonoran Desert peninsular herpetofauna consists of 52 total species of which 26 are endemic, whereas the mainland Sonoran Desert herpetofauna consists of 54 species of which 26 are endemic. These data indicate that both endemism and overall species number in the Sonoran Desert herpetofauna of the Baja California peninsula is roughly comparable to that of the mainland (Arizona + Sonora + Sinaloa).

With about 9.9 million ha of Sonoran Desertscrub on the peninsula and about 17.9 million ha on the mainland, this result confirms both the uniqueness of the peninsular herpetofauna within the Sonoran Desert context and the richness apparently connected to its strong vicariant history. It again suggests that the Gulf of California and the Sonoran Desert - isolated from the mainland's tropical influence - form dispersal barriers for Neotropical species and are key factors driving a possible peninsular depauperization effect.

**Conclusions**

Based on our similarity and affinity analyses, we consider the Sonoran assemblage (species occurring principally in Sinaloan Thornscrub and Sonoran Desertscrub) to represent the unique and regionally endemic core of Sonora's herpetofauna. Madrean, tropical, and northern temperate elements have played a strong role interacting with core faunal elements. This accords well with the early dispersal model of Bogert and Oliver (1945), which hypothesized five dispersal routes that influenced overall species richness in Sonora: from the south, (1) along the narrow coastal plain and (2) along the Sierra Madre Occidental; (3) from the eastern plateau or plains via valleys dissected into the north end of the Sierra Madre; (4) from the north, that is, from the mountains in Arizona; and (5) from the northwest, the Colorado-Mojave Desert. Our data support these historic connections, but are not adequate to distinguish this dispersal concept from vicariant hypotheses involving *in situ* endemism. Recent taxonomic changes and species discoveries suggest that the core Sonoran assemblage may have provided conditions for *in situ* adaptive speciation of some species. Determining the historical basis

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and importance of Sonora in speciation events within the Sonoran Desert and the topographically complex Sierra Madre Occidental and its associated archipelago and isolated valleys will require thorough distributional and phylogenetic studies, which are virtually non-existent for the region. To assist and perhaps stimulate such research, we offer the following conclusions:

1. Sonora has the highest overall herpetofaunal richness of any state in the region. This is due to its situation in the topographically complex transition between the Neotropical and Nearctic zones, and the presence of the richest desert formation in North America and the highly diverse, semi-temperate Madrean biota with its deep southerly penetration from the north into tropical latitudes.

2. For total herpetofauna, Sonora is most similar to Chihuahua, with which it shares a long portion of the Sierra Madre Occidental as well as many wide-ranging North American desert species.

3. The herpetofauna of Sonora is especially notable as the core and evolutionary center of the unique, subtropical Sonoran Desertscrub-Sinaloan Thornscrub species assemblage.

4. Our data on Sonora's lizard fauna clusters it with Arizona, New Mexico, and Chihuahua, reflecting the large number of shared species with eco-physiological adaptations to the hot, arid climates of the Sonoran and Chihuahuan Deserts.

5. Many Sonoran species with tropical affinities reach their northern latitudinal limits at moderate elevations in the Sierra Madre Occidental region, where they are driven upward in minimum elevation away from desert aridity and downward in maximum elevation by high-latitude cold. Thus, there is a bio-climatically determined habitat wedge for tropical and subtropical species distributions with a north-pointing tip.

6. Species with Sonoran Desertscrub and Sinaloan Thornscrub affinity have distributions that constrict south toward the coast. Most of these species range into Sinaloa, albeit usually rather sparingly. Desert-like bio-climatic conditions associated with high temperature and low rainfall at low elevation define this south-pointing habitat wedge in the distribution of the core desertscrub-thornscrub species assemblage.

7. At the state-level of analysis, the number of mainland endemics in Sonora is low and comparable to that in Arizona, New Mexico, and Baja California, but far less than Baja California Sur, where high endemism may be due in part to the historical separation of the cape region from the remainder of the peninsula and, to some extent, from mainland Sonoran influences.

8. Sonora has fewer islands and insular endemics than Baja California and Baja California Sur.

9. Peninsular Baja California, with a rich, unique herpetofauna marked by notable endemism is proportionately the most "Sonoran" in herpetofaunal affiliation. This is due to the paucity of temperate and, especially, tropical species resulting in peninsular depauperization, which is apparent at our state level of analysis.

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**Appendix 1:** Islands of Sonora.The following lists Sonora's Gulf of California islands (Sonora Secretaría de Comunicaciones y Transportes 2007) from north to south and includes coordinates and endemic herpetofauna, if present. Asterisks represent isolated inshore sand spit formations classified as islands.
Isla El Pelicano* 31°44'28" N, 114°37'29" W; Isla Patos 29°16'11" N, 112°27'32" W; Isla Tiburón 28°57'42" N, 112°21'49" W; Isla Alcatraz (Isla Pelicanos) 28°48'33" N, 111°58'9" W (*Sauromalus hispidus*); Isla Roca La Foca (Isla Cholludo) 28°44'15" N, 112°18'19" W; Isla Turners (Isla El Dátil) 28°43'11" N, 112°17'24" W; Isla San Esteban 28°41'49" N, 112°34'28" W (*Aspidoscelis estebanensis, Ctenosaura conspicuosa, Sauromalus varius, Crotalus estebanensis, Coluber slevini*), Isla San Pedro Mártir 28°22'45" N, 112°18'26" W (*Aspidoscelis martyris, Uta palmeri*), Isla San Pedro Nolasco 27°57'60" N, 111°22'40" W (*Aspidoscelis bacata*, *Ctenosaura nolascoensis*, *Uta nolascoensis*); Isla Vendado 27°57'19" N, 111° 7'18" W; Isla Pájaros* 27°53'39" N, 110°50'20" W; Isla Los Algodones* 27°46'43" N, 110°36'53" W; Isla Lobos* 27°18'48" N, 110°34'60" W; Isla Siari* 27°3'46" N, 109°58'39" W; Isla Basacori* 26°21'50" N, 109°14'22" W.

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**Appendix 2:** Checklist of the amphibians and reptiles of Sonora and adjoining states. Occurrence symbols and abbreviations are: 1 = reported, 0 = unreported, E = non-insular state endemic, M = marine species, X = insular endemic. Affinity abbreviations are as follows: CAL = Californian, CHI = Chihuahuan, ETM = Eastern Temperate, GEN = Generalist, GBN = Great Basin, GPS = Great Plains, MDN = Madrean, MAR = Marine, NDG = North American Desert Generalist, SON = Sonoran, TRO = Tropical. A summary of exotic species is included below the list. Recent synonyms are listed in brackets below current taxon where deemed useful. Names of species occurring in Sonora are in bold. Numbers presented in the TL column reference the summary of species names with type localities originally designated as being in Sonora (Appendix 5).

| Taxon | English Common Name | Affin | ARI | BC | BCS | CHI | NME | SIN | SON | TL |
|---|---|---|---|---|---|---|---|---|---|---|
| **CAUDATA** | | | | | | | | | | |
| **Ambystomatidae** | | | | | | | | | | |
| ***Ambystoma rosaceum* Taylor, 1941** | **Tarahumara Salamander** | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Ambystoma silvensis* Webb, 2004 | Pine Woods Salamander | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |

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| Taxon | English Common Name | Affin | ARI | BC | BCS | CHI | NME | SIN | SON | TL |
|---|---|---|---|---|---|---|---|---|---|---|
| ***Ambystoma mavortium* Baird, 1850** | **Barred Tiger Salamander** | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| **Plethodontidae** | | | | | | | | | | |
| *Aneides hardii* (Taylor, 1941) | Sacramento Mountains Salamander | GBN | 0 | 0 | 0 | 0 | E | 0 | 0 | |
| *Aneides lugubris* (Hallowell, 1849) | Arboreal Salamander | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Batrachoceps major* Camp, 1919 | Garden Slender Salamander | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Ensatina eschscholtzii* Gray 1850 | Monterey Ensatina | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| ***Pseudoeurycea bellii* (Gray, 1850)** | **Bell's Salamander** | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| *Plethodon neomexicanus* Stebbins and Riemer, 1950 | Jemez Mountains Salamander | GBN | 0 | 0 | 0 | 0 | E | 0 | 0 | |
| **ANURA** **Bufonidae** | | | | | | | | | | |
| *Anaxyrus boreas* (Baird and Girard, 1852) *[Bufo boreas]* | Western Toad | CAL | 0 | 1 | 0 | 0 | 1 | 0 | 0 | |
| *Anaxyrus californicus* (Camp, 1915) *[Bufo californicus]* | Arroyo Toad | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| ***Anaxyrus cognatus* (Say , 1823) *[Bufo cognatus]*** | **Great Plains Toad** | GPS | 1 | 1 | 0 | 1 | 1 | 1 | 1 | |
| ***Anaxyrus debilis* (Girard, 1854) *[Bufo debilis]*** | **Green Toad** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Anaxyrus kelloggi* (Taylor, 1938) *[Bufo kelloggi]*** | **Little Mexican Toad** | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| ***Anaxyrus mexicanus* (Brocchi, 1879) *[Bufo mexicanus]*** | **Mexican Madre Toad** | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Anaxyrus microscaphus* (Cope, 1866) *[Bufo microscaphus]* | Arizona Toad | GEN | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Anaxyrus punctatus* (Baird and Girard, 1852) *[Bufo punctatus]*** | **Red-spotted Toad** | GEN | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| ***Anaxyrus retiformis* (Sanders and Smith, 1951) *[Bufo retiformis]*** | **Sonoran Green Toad** | SON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| *Anaxyrus speciosus* (Girard, 1854) *[Bufo speciosus]* | Texas Toad | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| ***Anaxyrus woodhousii* (Girard, 1854) *[Bufo woodhousii]*** | **Woodhouse's Toad** | GEN | 1 | 1 | 0 | 1 | 1 | 0 | 1 | |
| *Ollotis marmorea* (Wiegmann, 1833) *[Bufo marmoreus]* | Marbled Toad | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Ollotis alvaria* (Girard in Baird, 1859) *[Bufo alvarius]*** | **Sonoran Desert Toad** | SON | 1 | 1 | 0 | 1 | 1 | 1 | 1 | |
| ***Ollotis mazatlanensis* (Taylor, 1940) *[Bufo mazatlanensis]*** | **Sinaloa Toad** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Ollotis occidentalis* (Camerano, 1879) *[Bufo occidentalis]*** | **Pine Toad** | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Rhinella marina* (Linnaeus, 1758) *[Bufo marinus]*** | **Cane Toad** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| **Brachycephalidae** | | | | | | | | | | |
| ***Craugastor augusti* (Dugès in Brocchi, 1879) *[Eleutherodactylus augusti]*** | **Barking Frog** | TRO | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Craugastor hobartsmithi* (Taylor, 1937) *[Eleutherodactylus hobartsmithi]* | Smith's Pigmy Tropical Frog | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Craugastor occidentalis* (Taylor, 1941) *[Eleutherodactylus occidentalis]*** | **Taylor's Barking Frog** | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| ***Craugastor tarahumaraensis* (Taylor, 1940) *[Eleutherodactylus tarahumaraensis]*** | **Tarahumara Barking Frog** | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| *Craugastor vocalis* (Taylor, 1940) *[Eleutherodactylus vocalis]* | Pacific Stream Frog | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Eleutherodactylus interorbitalis* (Langebartel and Shannon, 1956) *[Syrrhophus interorbitalis]*** | **Spectacled Chirping Frog** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Eleutherodactylus marnockii* (Cope 1878) *[Syrrhophus marnockii]* | Cliff Chirping Frog | CHI | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Eleutherodactylus nitidus* Peters, 1870 *[Syrrhophus nitidus]* | Shiny Peeping Frog | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |

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| *Eleutherodactylus saxatilis* (Webb, 1962) *[Syrrhophus saxatilis]* | Marbled Peeping Frog | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Eleutherodactylus teretistes* (Duellman, 1958) *[Syrrhophus teretistes]* | Whistling Frog | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| **Hylidae** | | | | | | | | | | |
| *Acris crepitans* Baird, 1854 | Northern Cricket Frog | ETM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| *Exerodonta smaragdina* (Taylor, 1940) *[Hyla smaragdina]* | Emerald Treefrog | MDN | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Hyla arenicolor* Cope, 1866** | **Canyon Treefrog** | GEN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 2 |
| ***Hyla wrightorum* Taylor, 1939** | **Mountain Treefrog** | MDN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Pachymedusa dacnicolor* (Cope, 1864)** | **Mexican Leaf Frog** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Plectrohyla bistincta* (Cope, 1878) | Mexican Fringe-limbed Frog | MDN | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Pseudacris cadaverina* (Cope, 1866) *[Hyla cadaverina]* | California Treefrog | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Pseudacris hypochondriaca* (Hallowell, 1854) *[Hyla regilla]* | Baja California Treefrog | GEN | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Pseudacris maculata* (Agassiz 1850) | Boreal Chorus Frog | ETM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Smilisca baudinii* (Duméril and Bibron, 1841)** | **Mexican Tree Frog** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Smilisca fodiens* (Boulenger, 1882) *[Pternohyla fodiens]*** | **Lowland Burrowing Treefrog** | TRO | 1 | 0 | 0 | 0 | 0 | 1 | 1 | |
| ***Tlalocohyla smithii* (Boulenger, 1902) *[Hyla smithii]*** | **Dwarf Mexican Treefrog** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Trachycephalus venulosus* (Laurenti, 1768) *[Hyla venulosa]* | Veined Treefrog | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Triprion spatulatus* (Günther, 1882) | Shovel-headed Treefrog | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| **Leptodactylidae** | | | | | | | | | | |
| ***Leptodactylus melanonotus* (Hallowell, 1861)** | **Sabinal Frog** | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| **Microhylidae** | | | | | | | | | | |
| ***Gastrophryne olivacea* (Hallowell, 1856)** | **Great Plains Narrow-mouthed Toad** | GEN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Gastrophryne usta* (Cope, 1866) | Two-spaded Narrow-mouthed Toad | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| ***Hypopachus variolosus* (Cope, 1866)** | **Sheep Frog** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| **Pelobatidae** | | | | | | | | | | |
| ***Scaphiopus couchii* Baird, 1854** | **Couch's Spadefoot** | GEN | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| *Spea bombifrons* (Cope, 1863) | Plains Spadefoot | GPS | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Spea hammondii* (Baird, 1859 "1857") | Western Spadefoot | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Spea intermontana* (Cope, 1883) | Great Basin Spadefoot | GBN | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ***Spea multiplicata* (Cope, 1863)** | **Mexican Spadefoot** | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| **Ranidae** | | | | | | | | | | |
| *Lithobates berlandieri* (Baird, 1854) *[Lithobates berlandieri]* | Rio Grande Leopard Frog | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Lithobates blairi* (Mecham, Littlejohn, Oldham, Brown, and Brown, 1973)** *[Rana blairi]* | Plains Leopard Frog | GPS | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Lithobates chiricahuensis* (Platz and Mecham, 1979)** ***[Rana chiricahuensis]*** | **Chiricahua Leopard Frog** | MDN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Lithobates forreri* (Boulenger, 1883)** ***[Rana forreri]*** | **Forrer's Leopard Frog** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Lithobates lemosespinali* (Smith and Chiszar 2003) *[Rana lemosespinali]* | Lemos-Espinal's Leopard Frog | MDN | 0 | 0 | 0 | E | 0 | 0 | 0 | |
| ***Lithobates magnaocularis* (Frost and Bagnara, 1974)** ***[Rana magnaocularis]*** | **Northwest Mexico Leopard Frog** | GEN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Lithobates onca* (Cope, 1875) *[Rana onca* | Relict Leopard Frog | SON | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| *Lithobates pipiens* (Schreber, 1782) *[Rana pipiens]* | Northern Leopard Frog | ETM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Lithobates pustulosus* (Boulenger, 1883)** ***[Rana pustulosa]*** | **White-striped Frog** | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| ***Lithobates tarahumarae* (Boulenger, 1917)** ***[Rana tarahumarae]*** | **Tarahumara Frog** | MDN | 1 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Lithobates yavapaiensis* (Platz and Frost, 1984)** ***[Rana yavapaiensis]*** | **Lowland Leopard Frog** | SON | 1 | 0 | 0 | 0 | 1 | 0 | 1 | |

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| *Rana draytonii* Baird and Girard, 1852 *[Rana aurora]* | California Red-legged Frog | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| **CROCODILIA** | | | | | | | | | | |
| **Crocodylidae** | | | | | | | | | | |
| ***Crocodylus acutus* Cuvier, 1807** | **American Crocodile** | MAR | 0 | 0 | 0 | 0 | 0 | M | M* | |
| **TESTUNDINATA** | | | | | | | | | | |
| **Cheloniidae** | | | | | | | | | | |
| ***Caretta caretta* (Linnaeus, 1758)** | **Loggerhead Sea Turtle** | MAR | 0 | M | M | 0 | 0 | M | M | |
| ***Chelonia mydas* (Linnaeus, 1758)** | **Green Sea Turtle** | MAR | 0 | M | M | 0 | 0 | M | M | |
| ***Eretmochelys imbricata* (Linnaeus, 1766)** | **Hawksbill Sea Turtle** | MAR | 0 | M | M | 0 | 0 | M | M | |
| ***Lepidochelys olivacea* (Eschscholtz, 1829)** | **Olive Ridley Sea Turtle** | MAR | 0 | M | M | 0 | 0 | M | M | |
| **Chelydridae** | | | | | | | | | | |
| *Chelydra serpentina* (Linnaeus, 1758) | Snapping Turtle | ETM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| **Dermochylidae** | | | | | | | | | | |
| ***Dermochelys coriacea* (Vandelli, 1761)** | **Leatherback Sea Turtle** | MAR | 0 | M | M | 0 | 0 | M | M | 6 |
| **Emydidae** | | | | | | | | | | |
| *Actinemys marmorata* (Baird and Girard, 1852) | Pacific Pond Turtle | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Chrysemys picta* (Schneider, 1783) | Painted Turtle | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Pseudemys gorzugi* Ward, 1984 | Rio Grande Cooter | CHI | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Terrapene nelsoni* Stejneger, 1925** | **Spotted Box Turtle** | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 7 |
| ***Terrapene ornata* (Agassiz, 1857)** | **Ornate Box Turtle** | GPS | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Trachemys gaigeae* (Hartweg, 1939) | Mexican Plateau Slider | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Trachemys nebulosa* (Van Denburgh, 1895) | **Baja California Slider** | TRO | 0 | 0 | 1 | 0 | 0 | 1 | 1 | |
| *Trachemys ornata* (Gray, 1831) | Ornate Slider | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Trachemys scripta* (Schoepff, 1792) | Pond Slider | ETM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Trachemys yaquia* Legler & Webb, 1979** | Yaqui Slider | SON | 0 | 0 | 0 | 0 | 0 | 0 | E | 5 |
| **Geoemydidae** | | | | | | | | | | |
| ***Rhinoclemmys pulcherrima* (Gray, 1856)** | **Painted Wood Turtle** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |

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| **Kinosternidae** | | | | | | | | | | |
| ***Kinosternon alamosae* Berry and Legler, 1980** | **Alamos Mud Turtle** | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| ***Kinosternon arizonense* Gilmore, 1922 *[Kinosternon flavescens arizonense]*** | **Arizona Mud Turtle** | SON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| *Kinosternon durangoense* Iverson, 1979 | Durango Mud Turtle | CHI | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Kinosternon flavescens* (Agassiz, 1857) | Yellow Mud Turtle | GPS | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Kinosternon hirtipes* Wagler, 1830 | Rough-footed Mud Turtle | GEN | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| ***Kinosternon integrum* LeConte, 1854** | **Mexican Mud Turtle** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Kinosternon sonoriense* LeConte, 1854** | **Sonoran Mud Turtle** | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| **Testudinidae** | | | | | | | | | | |
| ***Gopherus agassizii* (Cooper, 1863)** | **Desert Tortoise** | SON | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| *Gopherus flavomarginatus* Ligler 1959 | Bolson Tortoise | CHI | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| **Trionychidae** | | | | | | | | | | |
| *Apalone mutica* (Lesueur, 1827) | Smooth Softshell | ETM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| *Apalone spinifera* (Lesueur, 1827) | Spiny Softshell | GPS | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| **SAURIA** **Anguidae** | | | | | | | | | | |
| *Anniella geronimensis* Shaw, 1940 | Baja California Legless Lizard | CAL | 0 | E | 0 | 0 | 0 | 0 | 0 | |
| *Anniella pulchra* Gray, 1852 | California Legless Lizard | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Barisia ciliaris* (Smith, 1942) | Northern Alligator Lizard | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Barisia levicollis* Stejneger, 1890 | Chihuahuan Alligator Lizard | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Elgaria cedrosensis* (Fitch, 1934) | Isla Cedros Alligator Lizard | SON | 0 | E | 0 | 0 | 0 | 0 | 0 | |
| ***Elgaria kingii* Gray, 1838** | **Madrean Alligator Lizard** | MDN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Elgaria multicarinata* (Blainville, 1835) | Southern Alligator Lizard | CAL | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Elgaria nana* (Fitch, 1934) | San Martin Alligator Lizard | CAL | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| *Elgaria paucicarinata* (Fitch, 1934) | San Lucan Alligator Lizard | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| *Elgaria velazquezi* Grismer and Hollingsworth 2001 | Central Baja Alligator Lizard | SON | 0 | 0 | E | 0 | 0 | 0 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Gerrhonotus infernalis* Baird 1859 | Texas Alligator Lizard | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Gerrhonotus liocephalus* Wiegmann 1828 | Wiegmann's Alligator Lizard | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| **Bipedidae** | | | | | | | | | | |
| *Bipes biporus* (Cope, 1894) | Five-toed Worm Lizard | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| **Crotaphytidae** | | | | | | | | | | |
| *Crotaphytus bicinctores* Smith and Tanner, 1972 | Great Basin Collared Lizard | GBN | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ***Crotaphytus collaris* (Say, 1823)** | **Eastern Collared Lizard** | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Crotaphytus dickersonae* Schmidt, 1922** | **Sonoran Collared Lizard** | SON | 0 | 0 | 0 | 0 | 0 | 0 | E | 16 |
| *Crotaphytus grismeri* McGuire, 1994 | Sierra los Cucapas Collared Lizard | SON | 0 | E | 0 | 0 | 0 | 0 | 0 | |
| *Crotaphytus insularis* Van Denburgh and Slevin, 1921 | Desert Collared Lizard | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| ***Crotaphytus nebrius* Axtell and Montanucci, 1977** | **Sonoran Collared Lizard** | SON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| *Crotaphytus vestigium* Smith and Tanner, 1972 | Baja California Collared Lizard | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Gambelia copeii* (Yarrow, 1882) | Cope's Leopard Lizard | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Gambelia wislizenii* (Baird and Girard, 1852)** | **Long-nosed Leopard Lizard** | NDG | 1 | 1 | 0 | 1 | 1 | 0 | 1 | |
| **Eublepharidae** | | | | | | | | | | |
| *Coleonyx brevis* Stejneger, 1893 | Texas Banded Gecko | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Coleonyx fasciatus* (Boulenger, 1885)** | **Black Banded Gecko** | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| *Coleonyx gypsicolus* Grismer and Ottley, 1988 | Isla San Marcos Barefoot Banded Gecko | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Coleonyx switaki*(Murphy, 1974) | Switak's Banded Gecko | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Coleonyx variegatus* (Baird, 1859)** | **Western Banded Gecko** | SON | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 15 |
| **Gekkonidae** | | | | | | | | | | |
| *Phyllodactylus bugastrolepis* Dixon, 1966 | Isla Santa Catalina Leaf-toed Gecko | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Phyllodactylus homolepidurus* Smith, 1935** | **Sonoran Leaf-toed Gecko** | SON | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 26 |
| ***Phyllodactylus nocticolus* Dixon, 1964** | **Peninsular Leaf-toed Gecko** | SON | 0 | 1 | 1 | 0 | 0 | 0 | 1 | |
| *Phyllodactylus partidus* Dixon, 1966 | Isla Partida Norte Leaf-toed Gecko | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |

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| ***Phyllodactylus tuberculosus* Wiegmann, 1835** | **Yellowbelly Gecko** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Phyllodactylus unctus* (Cope, 1863) | San Lucan Leaf-toed Gecko | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| *Phyllodactylus xanti* (Cope, 1863) | Cape Leaf-toed Gecko | SON | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| **Helodermatidae** | | | | | | | | | | |
| ***Heloderma horridum* (Wiegmann, 1829)** | **Beaded Lizard** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Heloderma suspectum* Cope, 1869** | **Gila Monster** | SON | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 20 |
| **Iguanidae** | | | | | | | | | | |
| ***Ctenosaura conspicuosa* Dickerson, 1919 *[Ctenosaura hemilopha conspicuosa]*** | **Isla San Esteban Spiny-tailed Iguana** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | |
| *Ctenosaura hemilopha*(Cope, 1863) | Cape Spiny-tailed Iguana | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| ***Ctenosaura macrolopha* Smith, 1972 *[Ctenosaura hemilopha macrolopha]*** | **Sonoran Spiny-tailed Iguana** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 17 |
| ***Ctenosaura nolascensis* Smith, 1972 *[Ctenosaura hemilopha nolascensis]*** | **Isla San Pedro Nolasco Spiny-tailed Iguana** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | |
| *Ctenosaura pectinata* (Wiegmann 1834) | Western Spiny-tailed Iguana | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Dipsosaurus catalinensis* Van Denburgh, 1922 | Isla Santa Catalina Desert Iguana | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | 18 |
| ***Dipsosaurus dorsalis* Baird and Girard, 1852** | **Desert Iguana** | SON | 1 | 1 | 1 | 0 | 0 | 1 | 1 | |
| *Iguana iguana* (Linnaeus 1758) | Common Green Iguana | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Sauromalus ater* Dumeril, 1856 *[Sauromalus obesus]*** | **Common Chuckwalla** | SON | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 27 |
| ***Sauromalus hispidus* Stejneger, 1891** | **Spiny Chuckwalla** | SON | 0 | X | 0 | 0 | 0 | 0 | X | |
| *Sauromalus klauberi* Shaw, 1941 | Spotted Chuckwalla | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Sauromalus slevini* Van Denburgh, 1922 | Montserrat Chuckwalla | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Sauromalus varius* Dickerson, 1919** | **Piebald Chuckwalla** | SON | 0 | X | 0 | 0 | 0 | 0 | X | |
| **Phrynosomatidae** | | | | | | | | | | |
| ***Callisaurus draconoides* Blainville, 1835** | **Zebra-tailed Lizard** | SON | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 8 |
| ***Cophosaurus texanus* Troschel, 1852** | **Greater Earless Lizard** | NDG | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |

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| ***Holbrookia elegans* Bocourt, 1874** | **Elegant Earless Lizard** | GEN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 21 |
| ***Holbrookia maculata* Girard, 1851** | **Common Lesser Earless Lizard** | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Petrosaurus mearnsi* (Stejneger, 1894) | Banded Rock Lizard | SON | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Petrosaurus repens* (Van Denburgh, 1895) | Short-nosed Rock Lizard | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Petrosaurus slevini* (Van Denburgh, 1922) | Slevin's Banded Rock Lizard | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| *Petrosaurus thalassinus* (Cope, 1863) | San Lucan Rock Lizard | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| *Phrynosoma blainvillii* Gray, 1939 *[Phrynosoma coronatum blainvillii]* | Short-tailed Horned Lizard | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Phrynosoma cerroense* Stejneger, 1893 *[Phrynosoma coronatum cerroense]* | Cedros Island Horned Lizard | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Phrynosoma cornutum* (Harlan, 1825)** | **Texas Horned Lizard** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 22 |
| *Phrynosoma coronatum* (Blainville, 1835) | Coast Horned Lizard | CAL | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| ***Phrynosoma ditmarsi* Stejneger, 1906** | **Rock Horned Lizard** | MDN | 0 | 0 | 0 | 0 | 0 | 0 | E | 23 |
| ***Phrynosoma goodei* Stejneger, 1893 *[Phrynosoma platyrhinos goodei]*** | **Goode's Horned Lizard** | SON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 24 |
| ***Phrynosoma hernandesi* Girard, 1858** | **Greater Short-horned Lizard** | MDN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 31 |
| ***Phrynosoma mcallii* (Hallowell, 1852)** | **Flat-tailed Horned Lizard** | SON | 1 | 1 | 0 | 0 | 0 | 0 | 1 | |
| ***Phrynosoma modestum* Girard, 1852** | **Round-tailed Horned Lizard** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Phrynosoma orbiculare* (Linnaeus 1789)** | **Mountain Horned Lizard** | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| *Phrynosoma platyrhinos* Girard, 1852 | Desert Horned Lizard | NDG | 1 | 1 | 0 | 0 | 0 | 0 | 0 | |
| ***Phrynosoma solare* Gray, 1845** | **Regal Horned Lizard** | SON | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 25 |
| *Phrynosoma wigginsi* Montanucci, 2004 *[Phrynosoma coronatum]* | Gulf Coast Horned Lizard | SON | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| ***Sceloporus albiventris* Smith, 1939** *[Sceloporus horridus]* | Whitebelly Spiny Lizared | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Sceloporus angustus* (Dickerson, 1919) | Santa Cruz Island Sator | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Sceloporus arenicolus* Degenhardt and Jones, 1972 | Dunes Sagebrush Lizard | CHI | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| ***Sceloporus clarkii* Baird and Girard, 1852** | **Clark's Spiny Lizard** | GEN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 28 |
| ***Sceloporus cowlesi* Lowe and Norris, 1956** ***[Sceloporus undulatus consobrinus]*** | **Southwestern Fence Lizard** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Sceloporus bimaculosus* Phelan and Brattstrom, 1955 *[Sceloporus magister]* | Twin-spotted Spiny Lizard | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Sceloporus bulleri* Boulenger 1894 | Buller's Spiny Lizard | MDN | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Sceloporus edbelli* Smith, Chiszar and Lemos-Espinal, 2002c | Bell's Spiny Lizard | CHI | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Sceloporus graciosus* Baird and Girard, 1852 | Common Sagebrush Lizard | GBN | 1 | 1 | 0 | 0 | 1 | 0 | 0 | |
| *Sceloporus grandaevus* (Dickerson, 1919) | Cerralvo Island Spiny Lizard | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Sceloporus hunsakeri* Hall and Smith, 1979 | Hunsaker's Spiny Lizard | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| ***Sceloporus jarrovii* Cope in Yarrow, 1875** | **Yarrow's Spiny Lizard** | MDN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| ***Sceloporus lemosespinali* Lara-Gongora, 2004** *[Sceloporus grammicus]* | **Lemos-Espinal's Spiny Lizard** | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| *Sceloporus licki* Van Denburgh, 1895 | Cape Arboreal Spiny Lizard | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| *Sceloporus lineatulus* (Dickerson, 1919) | Isla Santa Catalina Spiny Lizard | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Sceloporus magister* Hallowell, 1854** | **Desert Spiny Lizard** | SON | 1 | 1 | 0 | 1 | 0 | 1 | 1 | |
| *Sceloporus merriami* Stejneger (1904) | Canyon Lizard | CHI | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| ***Sceloporus nelsoni* Cochran, 1923** | **Nelson's Spiny Lizard** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Sceloporus occidentalis* Baird and Girard, 1852 | Western Fence Lizard | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Sceloporus orcutti* Stejneger, 1893 | Granite Spiny Lizard | CAL | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Sceloporus poinsettii* Baird and Girard, 1852** | **Crevice Spiny Lizard** | CHI | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 29 |
| *Sceloporus shannonorum* Langebartel 1959 | Shannon's Spiny Lizard | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Sceloporus slevini* Smith, 1937** ***[Sceloporus scalaris]*** | **Slevin's Bunchgrass Lizard** | MDN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Sceloporus spinosus* Wiegmann 1828 | Eastern Spiny Lizard | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Sceloporus tristichus* Cope in Yarrow 1875 *[Sceloporus undulatus tristichus]* | Plateau Fence Lizard | GPS | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Sceloporus utiformis* Cope 1864 | Yellow-backed Spiny Lizard | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Sceloporus virgatus* Smith, 1938** | **Striped Plateau Lizard** | MDN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 30 |
| *Sceloporus zosteromus* Cope, 1863 | Baja California Spiny Lizard | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Uma notata* Baird, 1859 ***[Uma notata notata]*** | Colorado Desert Fringe-toed Lizard | SON | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Uma paraphygas* Williams, Chrapliwy, and Smith 1959 | Chihuahua Fringe-toed Lizard | CHI | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| ***Uma rufopunctata* Cope, 1895 *[Uma notata rufopunctata]*** | **Yuman Desert Fringe-toed Lizard** | SON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 32 |
| *Uma scoparia* Cope, 1894 | Mohave Fringe-toed Lizard | SON | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ***Urosaurus bicarinatus* (Duméril, 1856)** | **Tropical Tree Lizard** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Urosaurus graciosus* Hallowell, 1854** | **Long-tailed Brush-lizard** | SON | 1 | 1 | 0 | 0 | 0 | 0 | 1 | |
| *Urosaurus lahtelai* Rau and Loomis, 1977 | Baja California Brush Lizard | SON | 0 | E | 0 | 0 | 0 | 0 | 0 | |
| *Urosaurus nigricaudus* (Cope, 1864) | Black-tailed Brush Lizard | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Urosaurus ornatus* (Baird and Girard, 1852)** | **Ornate Tree Lizard** | GEN | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 33 |
| *Uta encantadae* Grismer, 1994 | Enchanted Side-blotched Lizard | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| *Uta lowei* Grismer, 1994 | Dead Side-blotched Lizard | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| ***Uta nolascensis* Van Denburgh and Slevin, 1921** | **Isla San Pedro Nolasco Side-blotched Lizard** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | 34 |
| ***Uta palmeri* Stejneger, 1890** | **Isla San Pedro Mártir Side-blotched Lizard** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | 35 |
| *Uta squamata* Dickerson, 1919 | Isla Santa Catalina Side-blotched Lizard | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Uta stansburiana* Baird and Girard, 1852** | **Common Side-blotched Lizard** | NDG | 1 | 1 | 1 | 1 | 1 | 0 | 1 | |
| *Uta tumidarostra* Grismer, 1994 | Swollen-nosed Side-blotched Lizard | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| **Polychrotidae** | | | | | | | | | | |
| ***Anolis nebulosus* (Wiegmann, 1834)** | **Clouded Anole** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Anolis utowanae* Barbour 1932 | Utowana Anole | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| **Scincidae** | | | | | | | | | | |
| *Plestiodon brevirostris* (Günther, 1860) *[Eumeces brevirostris]* | Short-nosed Skink | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| ***Plestiodon callicephalus* (Bocourt, 1879) *[Eumeces callicephalus]*** | **Mountain Skink** | MDN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Plestiodon colimensis* (Taylor 1935) *[Eumeces colimensis]* | Colima S kink | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Plestiodon gilberti* Van Denburgh, 1896 *[Eumeces gilberti]* | Gilbert's Skink | CAL | 1 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Plestiodon lagunensis* (Van Denburgh, 1895) *[Eumeces lagunensis]* | San Lucan Skink | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| ***Plestiodon obsoletus* (Baird and Girard, 1852) *[Eumeces obsoletus]*** | **Great Plains Skink** | GPS | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Plestiodon multilineatus* (Tanner, 1957) *[Eumeces multilineatus]* | Chihuahuan Skink | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Plestiodon multivirgatus* (Hallowell, 1857) *[Eumeces multivirgatus]* | Many-lined Skink | GBN | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Plestiodon parviauriculatus* (Taylor, 1933) *[Eumeces parviauriculatus]*** | **Northern Pigmy Skink** | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 19 |
| *Plestiodon parvulus* (Taylor 1933) *[Eumeces parvulus]* | Southern Pigmy Skink | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Plestiodon skiltonianus* (Baird and Girard, 1852) *[Eumeces skiltonianus]* | Western Skink | CAL | 1 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Plestiodon tetragrammus* (Baird, 1859 "1858") *[Eumeces tetragrammus]* | Four-lined Skink | CHI | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| **Teiidae** | | | | | | | | | | |
| A*spidoscelis arizonae* (Van Denburgh, 1896) *[Cnemidophorus inornatus arizonae]* | Arizona Striped Whiptail | CHI | E | 0 | 0 | 0 | 0 | 0 | 0 | |
| ***Aspidoscelis bacata* (Van Denburgh and Slevin, 1921) *[Cnemidophorus bacatus]*** | **Isla San Pedro Nolasco Whiptail** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | 9 |
| ***Aspidoscelis burti* (Taylor, 1938) *[Cnemidophorus burti]*** | **Canyon Spotted Whiptail** | SON | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 10 |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Aspidoscelis cana* (Van Denburgh and Slevin, 1921) *[Cnemidophorus canus]* | Isla Salsipuedes Whiptail | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| *Aspidoscelis carmenensis* (Maslin and Secoy, 1986) *[Cnemidophorus carmenensis]* | Isla Carmen Orange-throated Whiptail | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Aspidoscelis catalinensis* (Van Denburgh and Slevin, 1921) *[Cnemidophorus catalinensis]* | Isla Santa Catalina Whiptail | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Aspidoscelis celeripes* (Dickerson, 1919) *[Cnemidophorus celeripes]* | Isla San Jose Western Whiptail | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Aspidoscelis ceralbensis* (Van Denburgh and Slevin, 1921) *[Cnemidophorus ceralbensis]* | Isla Cerralvo Whiptail | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Aspidoscelis costata* (Cope, 1878) *[Cnemidophorus costatus]*** | **Western Mexico Whiptail** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 14 |
| *Aspidoscelis danheimae* (Burt, 1929) *[Cnemidophorus danheimae]* | Isla San Jose Whiptail | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Aspidoscelis dixoni* (Scudday, 1973) *[Cnemidophorus dixoni]* | Gray Checkered Whiptail | CHI | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| *Aspidoscelis espiritensis* (Van Denburgh and Slevin, 1921) *[Cnemidophorus espiritensis]* | Isla Espiritu Santo Whiptail | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Aspidoscelis estebanensis* (Dickerson, 1919) *[Cnemidophorus estebanensis]*** | **San Esteban Whiptail** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | |
| ***Aspidoscelis exsanguis* (Lowe, 1956) *[Cnemidophorus exsanguis]*** | **Chihuahuan Spotted Whiptail** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Aspidoscelis flagellicauda* (Lowe and Wright, 1964) *[Cnemidophorus flagellicaudus]* | Gila Spotted Whiptail | SON | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Aspidoscelis franciscensis* (Van Denburgh and Slevin, 1921) *[Cnemidophorus franciscensis]* | San Francisco Island Whiptail | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Aspidoscelis gularis* (Baird and Girard, 1852) *[Cnemidophorus gularis]* | Common Spotted Whiptail | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Aspidoscelis gypsi* (Wright and Lowe, 1993) *[Cnemidophorus gypsi]* | Little White Whiptail | CHI | 0 | 0 | 0 | 0 | E | 0 | 0 | |
| *Aspidoscelis hyperythra* (Cope, 1863) *[Cnemidophorus hyperythrus]* | Orange-throated Whiptail | CAL | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Aspidoscelis inornata* (Baird, 1859 "1858") *[Cnemidophorus inornatus]* | Little Striped Whiptail | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Aspidoscelis labialis* (Stejneger, 1890) *[Cnemidophorus labialis]* | Baja California Whiptail | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Aspidoscelis marmorata* (Baird and Girard, 1852) *[Cnemidophorus tigris marmoratus]* | Marbled Whiptail | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Aspidoscelis martyris* (Stejneger, 1892)** *[Cnemidophorus martyris]* | **Isla San Pedro Mártir Whiptail** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | 13 |
| *Aspidoscelis neomexicana* (Lowe and Zweifel, 1952) *[Cnemidophorus neomexicanus]* | New Mexico Whiptail | CHI | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Aspidoscelis opatae* (Wright, 1967)** ***[Cnemidophorus opatae]*** | **Opata Whiptail** | SON | 0 | 0 | 0 | 0 | 0 | 0 | E | 12 |
| *Aspidoscelis pai* (Wright and Lowe, 1993) *[Cnemidophorus inornatus pai]* | Pai Striped Whiptail | GBN | E | 0 | 0 | 0 | 0 | 0 | 0 | |
| *Aspidoscelis picta* (Van Denburgh and Slevin, 1921) *[Cnemidophorus pictus]* | Isla Monserrate Whiptail | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| *Aspidoscelis sexlineata* (Linnaeus, 1766) *[Cnemidophorus sexlineatus]* | Six-lined Racerunner | ETM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |

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| ***Aspidoscelis sonorae* (Lowe and Wright, 1964) *[Cnemidophorus sonorae]*** | **Sonoran Spotted Whiptail** | SON | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Aspidoscelis tesselata* (Say, 1823) *[Cnemidophorus tesselatus]* | Common Checkered Whiptail | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Aspidoscelis tigris* (Baird and Girard, 1852) *[Cnemidophorus tigris]*** | **Tiger Whiptail** | NDG | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 11 |
| ***Aspidoscelis uniparens* (Wright and Lowe, 1965) *[Cnemidophorus uniparens]*** | **Desert Grassland Whiptail** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Aspidoscelis velox* (Springer, 1928) *[Cnemidophorus velox]* | Plateau Striped Whiptail | GBN | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Aspidoscelis xanthonota* (Duellman and Lowe 1953) *[Cnemidophorus buti xanthontus]*** | **Red-backed Whiptail** | SON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| **Xantusiidae** | | | | | | | | | | |
| *Xantusia arizonae* Klauber, 1931 *[Xantusia vigilis arizonae]* | Arizona Night Lizard | SON | E | 0 | 0 | 0 | 0 | 0 | 0 | |
| *Xantusia bezyi* Papenfuss, Macey, and Schulte, 2001 | Bezy's Night Lizard | SON | E | 0 | 0 | 0 | 0 | 0 | 0 | |
| *Xantusia henshawi* Stejneger, 1893 | Granite Night Lizard | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Xantusia gilberti* Van Dengurgh, 1895 *[Xantusia vigilis gilberti]* | Gilbert's Night Lizard | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| ***Xantusia jaycolei* Bezy, Bezy, and Bolles, 2009 *[Xantusia vigilis]*** | **Cole's Night Lizard** | SON | 0 | 0 | 0 | 0 | 0 | 0 | E | 52 |
| *Xantusia sherbrookei* Bezy, Bezy, and Bolles, 2009 *[Xantusia wigginsi]* | Sherbrooke's Night Lizard | SON | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| *Xantusia vigilis* Baird, 1859 | Desert Night Lizard | SON | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| *Xantusia wigginsi* Savage, 1952 | Wiggins' Desert Night Lizard | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| **SERPENTES** | | | | | | | | | | |
| **Boidae** | | | | | | | | | | |
| ***Boa constrictor* Linnaeus, 1758** | **Boa Constrictor** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| ***Lichanura trivirgata* (Cope, 1861)** | **Rosy Boa** | SON | 1 | 1 | 1 | 0 | 0 | 0 | 1 | |
| **Colubridae** | | | | | | | | | | |
| ***Arizona elegans* Kennicott 1859** | **Glossy Snake** | NDG | 1 | 1 | 0 | 1 | 1 | 1 | 1 | |
| *Arizona pacata* Klauber, 1946 | Peninsular Glossy Snake | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Bogertophis rosaliae* (Mocquard, 1899) | Baja California Ratsnake | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Bogertophis subocularis* (Brown, 1901) | Trans-Pecos Ratsnake | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Chilomeniscus savagei* Cliff, 1954 | Isla Cerralvo Sand Snake | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Chilomeniscus stramineus* Cope, 1861 *[Chilomeniscus cinctus]*** | **Variable Sand Snake** | SON | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 37 |
| ***Chionactis occipitalis* (Hallowell, 1854)** | **Western Shovel-nosed Snake** | SON | 1 | 1 | 0 | 0 | 0 | 0 | 1 | |
| ***Chionactis palarostris* (Klauber, 1937)** | **Sonoran Shovel-nosed Snake** | SON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 48 |
| *Coluber aurigulus* (Cope, 1861) *[Masticophis aurigulus]* | Cape Striped Racer | TRO | 0 | 0 | E | 0 | 0 | 0 | 0 | |
| *Coluber barbouri* Van Denburgh and Slevin, 1921 *[Masticophis barbouri]* | Isla Espiritu Santos Striped Racer | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Coluber bilineatus* (Jan, 1863) *[Masticophis bilineatus]*** | **Sonoran Whipsnake** | GEN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 44 |
| *Coluber constrictor* Linnaeus, 1758 | North American Racer | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Coluber flagellum* Shaw, 1802 *[Masticophis flagellum]*** | **Coachwhip** | NDG | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 45 |
| *Coluber fulginosus* (Cope, 1895) *[Masticophis fulginosus]* | Baja California Coachwhip | CAL | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Coluber lateralis* (Hallowell, 1853) *[Masticophis lateralis]* | California Striped Racer | CAL | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Coluber mentovarius* (Duméril, Bibron and Duméril 1854) *[Masticophis mentovarius]*** | **Neotropical Whipsnake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Coluber slevini* (Lowe and Norris, 1953) *[Masticophis slevini]*** | **Isla San Esteban Whipsnake** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | |
| *Coluber taeniatus* (Hallowell, 1852) *[Masticophis taeniatus]* | Striped Whipsnake | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Coniophanes lateritus* Cope 1862 (1861) | Stripeless Snake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Conopsis nasus* Günther (1858) | Large-nosed Earthsnake | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 0 | |
| ***Diadophis punctatus* (Linnaeus, 1766)** | **Ring-necked Snake** | GEN | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 38 |
| ***Drymarchon melanurus* (Duméril, Bibron and Duméril, 1854)** | **Central American Indigo Snake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Drymobius margaritiferus* (Schlegel, 1837)** | **Speckled Racer** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Enulius oligostichus* Smith, Arndt, Sherbrooke, 1967 | Mexican Long-tailed Snake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Geophis dugesii* Bocourt, 1883** | **Duges' Earth Snake** | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Gyalopion canum* Cope, 1860** | **Chihuahuan Hook-nosed Snake** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Gyalopion quadrangulare* (Günther, 1893)** | **Thornscrub Hook-nosed Snake** | TRO | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 41 |
| ***Heterodon kennerlyi* Kennicott, 1860** | **Mexican Hog-nosed Snake** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Hypsiglena chlorophaea* Cope, 1860 *[Hypsiglena torquata chlorophaea]*** | **Desert Nightsnake** | GEN | 1 | 1 | 1 | 0 | 0 | 1 | 1 | |
| *Hypsiglena jani* (Duges, 1866) *[Hypsiglena torquata jani]* | Chihuahuan Nightsnake | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |
| *Hypsiglena ochrorhyncha* (Cope, 1860) | Coast Nightsnake | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Hypsiglena slevini* Tanner, 1943 *[Eridiphas slevini]* | Baja California Nightsnake | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Hypsiglena torquata* (Günther, 1860) | Nightsnake | GEN | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Imantodes gemmistratus* Cope, 1861** | **Central American Tree Snake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Lampropeltis alterna* (Brown, 1901) | Gray-banded Kingsnake | CHI | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| *Lampropeltis catalinensis* (Van Denburgh and Slevin, 1921) | Isla Santa Catalina Kingsnake | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Lampropeltis getula* (Linnaeus, 1766)** | **Common Kingsnake** | GEN | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 42 |
| *Lampropeltis herrerae* Van Denburgh and Slevin, 1923 | Islas Todos Santos Mountain Kingsnake | CAL | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| ***Lampropeltis knoblochi* Taylor, 1940 *[Lampropeltis pyromelana knoblochi]*** | **Chihuahuan Mountain Kingsnake** | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Lampropeltis mexicana* (Garman, 1884) | San Luis Potosi Kingsnake | MDN | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Lampropeltis pyromelana* (Cope, 1867)** | **Sonoran Mountain Kingsnake** | MDN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Lampropeltis triangulum* (Lacépède, 1789)** | **Milksnake** | ETM | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Lampropeltis webbi* Bryson, Dixon, and Lazcano 2005 | | MDN | 0 | 0 | 0 | 0 | 0 | E | 0 | |
| *Lampropeltis zonata* (Lockington ex Blainville, 1876) | California Mountain Kingsnake | CAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| *Leptodeira maculata* (Hallowell, 1861) | Southwestern Cat-eyed Snake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Leptodeira punctata* (Peters, 1867)** | **Western Cat-eyed Snake** | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| *Leptodeira septentrionalis* (Kennicott in Baird, 1859) | Northern Cat-eyed Snake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Leptodeira splendida* Günther, 1895** | **Splendid Cat-eyed Snake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 43 |
| ***Leptophis diplotropis* (Günther, 1872)** | **Pacific Coast Parrot Snake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Mastigodryas cliftoni* (Hardy, 1964) *[Dryadophis cliftoni]*** | **Clifton's Lizard Eater** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Mastigodryas melanolomus* (Cope, 1868) | Common Lizard Eater | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Nerodia erythrogaster* (Forster, 1771) | Plain-bellied Watersnake | ETM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| *Opheodrys vernalis* (Harlan, 1827) | Smooth Greensnake | ETM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Oxybelis aeneus* (Wagler, 1824)** | **Brown Vine Snake** | TRO | 1 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Pantherophis emoryi* (Baird and Girard, 1853) | Great Plains Ratsnake | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Phyllorhynchus browni* Stejneger, 1890** | **Saddled Leaf-nosed Snake** | SON | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 52 |
| ***Phyllorhynchus decurtatus* (Cope, 1868)** | **Spotted Leaf-nosed Snake** | SON | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 53 |
| ***Pituophis catenifer* (Blainville, 1835)** | **Gophersnake** | GEN | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| ***Pituophis deppei* (Duméril 1853)** | **Mexican Bullsnake** | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| *Pituophis vertebralis* (Blainville, 1835) | Baja California Gophersnake | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Procinura aemula* Cope, 1879 *[Sonora aemula]*** | **File-tailed Ground Snake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Pseudoficimia frontalis* (Cope, 1864)** | **False Ficimia** | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 46 |
| *Rhadinaea hesperia* Bailey, 1940 | Western Graceful Brownsnake | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| ***Rhinocheilus lecontei* Baird and Girard, 1853** | **Long-nosed Snake** | NDG | 1 | 1 | 0 | 1 | 1 | 1 | 1 | |
| ***Salvadora bairdii* Jan, 1860 in Jan & Sordelli, 1860-1866** | **Baird's Patch-nosed Snake** | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Salvadora grahamiae* Baird and Girard, 1853** | **Eastern Patch-nosed Snake** | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 47 |
| ***Salvadora hexalepis* (Cope, 1866)** | **Western Patch-nosed Snake** | NDG | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| ***Senticolis triaspis* (Cope, 1866)** | **Green Ratsnake** | TRO | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Sonora michoacanensis* Duges, 1885 | Michoacán Groundsnake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Sonora semiannulata* Baird and Girard, 1853** | **Western Groundsnake** | GEN | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 49 |
| ***Storeria storerioides* (Cope, 1865)** | **Mexican Brownsnake** | MDN | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| ***Sympholis lippiens* Cope, 1862** | **Mexican Short-tailed Snake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Tantilla bocourti* (Günther, 1895 in Salvin & Godman, 1885-2002) | Bocourt's Blackheaded Snake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Tantilla calamarina* Cope 1867 (1866) | Pacific Coast Centipede Snake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Tantilla hobartsmithi* Taylor, 1937** | **Smith's Black-headed Snake** | NDG | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 50 |
| ***Tantilla nigriceps* Kennicott, 1860** | **Plains Black-headed Snake** | GPS | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Tantilla planiceps* (Blainville, 1835) | Western Black-headed Snake | CAL | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Tantilla wilcoxi* Stejneger, 1902** | **Chihuahuan Black-headed Snake** | MDN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| ***Tantilla yaquia* Smith, 1942** | **Yaqui Black-headed Snake** | TRO | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| ***Thamnophis cyrtopsis* (Kennicott, 1860)** | **Black-necked Gartersnake** | GEN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Thamnophis elegans* (Baird and Girard, 1853) | Terrestrial Gartersnake | GBN | 1 | 1 | 0 | 1 | 1 | 0 | 0 | |
| ***Thamnophis eques* (Reuss, 1834)** | **Mexican Gartersnake** | GEN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 40 |
| *Thamnophis errans* Smith, 1942 | Mexican Wandering Gartersnake | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Thamnophis hammondii* (Kennicott, 1860) | Two-striped Gartersnake | CAL | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Thamnophis marcianus* (Baird and Girard, 1853)** | **Checkered Gartersnake** | GEN | 1 | 1 | 0 | 1 | 1 | 0 | 1 | |
| ***Thamnophis melanogaster* Peters, 1864** | **Mexican Black-bellied Gartersnake** | MDN | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| *Thamnophis radix* (Baird and Girard, 1853) | Plains Gartersnake | GPS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Thamnophis proximus* (Say, 1823) | Western Ribbonsnake | ETM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| ***Thamnophis rufipunctatus* (Cope, 1875)** | **Narrow-headed Gartersnake** | MDN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Thamnophis sirtalis* (Linnaeus, 1758) | Common Gartersnake | ETM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Thamnophis validus* (Kennicott, 1860)** | **Mexican West Coast Gartersnake** | TRO | 0 | 0 | 1 | 1 | 0 | 1 | 1 | |
| ***Trimorphodon lambda*(Duméril, Bibron and Duméril 1854)** | **Western Lyre Snake** | SON | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 51 |
| *Trimorphodon lyrophanes* (Cope 1861) | California Lyre Snake | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Trimorphodon paucimaculatus* Taylor, 1936 | | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Trimorphodon vilkinsonii* Cope 1886 | Texas Lyresnake | CHI | 0 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Trimorphodon tau* Cope, 1870** | **Mexican Lyre Snake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Tropidoclonion lineatum* (Hallowell, 1856) | Lined Snake | GPS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| *Tropidodipsas annulifera* (Boulenger, 1894) | Western Snail-eating Snake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| *Tropidodipsas philippi* (Jan, 1863) | Philippi's Snail-eating Snake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Tropidodipsas repleta* Smith, Lemos-Espinal, Hartman and Chiszar 2005** | | TRO | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| **Hydrophiidae** | | | | | | | | | | |
| ***Pelamis platurus* (Linnaeus, 1766)** | **Yellow-bellied Seasnake** | MAR | 0 | M | M | 0 | 0 | M | M | |
| **Elapidae** | | | | | | | | | | |
| ***Micruroides euryxanthus* (Kennicott, 1860)** | **Sonoran Coral Snake** | SON | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 39 |
| ***Micrurus distans* (Kennicott, 1860)** | **West Mexican Coral Snake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| **Leptotyphlopidae** | | | | | | | | | | |
| ***Leptotyphlops dissectus* (Cope, 1896)** | **New Mexico Threadsnake** | CHI | 1 | 0 | 0 | 1 | 1 | 0 | 0 | |
| ***Leptotyphlops humilis* (Baird and Girard, 1853)** | **Western Threadsnake** | NDG | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| **Viperidae** | | | | | | | | | | |
| ***Agkistrodon bilineatus* Günther, 1863** | **Cantil** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Agkistrodon contortrix* (Linnaeus, 1766) | Copperhead | ETM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Crotalus angelensis* Klauber, 1963 | Isla Angel de la Guarda Rattlesnake | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| ***Crotalus atrox* Baird and Girard, 1853** | **Western Diamond-backed Rattlesnake** | NDG | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 36 |
| ***Crotalus basiliscus* (Cope, 1864)** | **Mexican West Coast Rattlesnake** | TRO | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| *Crotalus caliginis* Klauber, 1949 | Isla Coronado Rattlesnake | CAL | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| *Crotalus catalinensis* Cliff, 1954 | Santa Catalina Island Rattlesnake | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Crotalus cerastes* Hallowell, 1854** | **Sidewinder** | SON | 1 | 1 | 0 | 0 | 0 | 0 | 1 | |
| *Crotalus cerberus* (Coues, 1875) *[Crotalus viridis cerberus]* | Arizona Black Rattlesnake | GBN | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| *Crotalus enyo* (Cope, 1861) | Baja California Rattlesnake | SON | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Crotalus estebanensis* Klauber, 1949** | **Isla San Esteban Black-tailed Rattlesnake** | SON | 0 | 0 | 0 | 0 | 0 | 0 | X | |
| ***Crotalus lepidus* (Kennicott, 1861)** | **Rock Rattlesnake** | MDN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Crotalus lorenzoensis* Radcliffe and Maslin, 1975 | San Lorenzo Island Diamond Rattlesnake | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| ***Crotalus mitchellii* (Cope, 1861)** | **Speckled Rattlesnake** | SON | 1 | 1 | 1 | 0 | 0 | 0 | 1 | |
| ***Crotalus molossus* Baird and Girard, 1853** | **Black-tailed Rattlesnake** | GEN | 1 | 0 | 0 | 1 | 1 | 1 | 1 | |
| *Crotalus muertensis* Klauber, 1949 | Isla El Muerto Rattlesnake | SON | 0 | X | 0 | 0 | 0 | 0 | 0 | |
| *Crotalus oreganus* Holbrook, 1840 *[Crotalus viridis]* | Western Rattlesnake | GEN | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| *Crotalus ruber* Cope, 1892 | Red Diamond Rattlesnake | CAL | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| ***Crotalus scutulatus* (Kennicott, 1861)** | **Mohave Rattlesnake** | NDG | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |
| *Crotalus stejnegeri* Dunn, 1919 | Long-tailed Rattlesnake | TRO | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| ***Crotalus pricei* Van Denburgh, 1895** | **Twin-spotted Rattlesnake** | MDN | 1 | 0 | 0 | 1 | 0 | 0 | 1 | |
| ***Crotalus tigris* Kennicott in Baird, 1859** | **Tiger Rattlesnake** | SON | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| *Crotalus tortugensis* Van Denburgh and Slevin, 1921 | Tortuga Island Diamondback Rattlesnake | SON | 0 | 0 | X | 0 | 0 | 0 | 0 | |
| ***Crotalus viridis* (Rafinesque, 1818)** | **Prairie Rattlesnake** | GPS | 0 | 0 | 0 | 1 | 1 | 0 | 1 | |
| ***Crotalus willardi* Meek, 1905** | **Ridge-nosed Rattlesnake** | MDN | 1 | 0 | 0 | 1 | 1 | 0 | 1 | |

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|---|---|---|---|---|---|---|---|---|---|---|
| *Sistrurus catenatus* (Rafinesque, 1818) | Massasauga | GPS | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| **Introduced species** | | | | | | | | | | |
| ***Lithobates berlandieri* (Baird, 1854) *[Rana berlandieri]*** | **Rio Grande Leopard Frog** | | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| ***Lithobates catesbeianus* (Shaw, 1802) *[Rana catesbeiana]*** | **American Bullfrog** | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| *Lithobates forreri* (Boulenger, 1883) *[Rana forreri]* | Forrer's Leopard Frog | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| *Smilisca baudinii* (Duméril and Bibron, 1841) | Mexican Tree Frog | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| *Xenopus laevis* (Daudin, 1802) | African Clawed Frog | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| *Chelydra serpentina* (Linnaeus, 1758) | Snapping Turtle | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| *Trachemys scripta* (Schoepff, 1792) | Pond Slider | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | |
| *Ctenosaura conspicuosa* Dickerson, 1919 *[Ctenosaura hemilopha conspicuosa]* | Isla San Esteban Spiny-tailed Iguana | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| *Ctenosaura macrolopha* Smith, 1972 *[Ctenosaura hemilopha macrolopha]* | Sonoran Spiny-tailed Iguana | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ***Hemidactylus frenatus* Duméril and Bibron, 1836** | **Common House Gecko** | | 0 | 0 | 1 | 0 | 0 | 1 | 1 | |
| **Hemidactylus turcicus (Linnaeus, 1758)** | **Mediterranean House Gecko** | | 1 | 1 | 0 | 1 | 0 | 0 | 1 | |
| *Gehyra mutilata* (Wiegmann, 1843) | Mutilating Gecko | | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| *Aspidoscelis neomexicana* (Lowe and Zweifel, 1952) *[Cnemidophorus neomexicanus]* | New Mexico Whiptail | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ***Ramphotyphlops braminus* (Daudin, 1803)** | **Brahminy Blind Snake** | | 1 | 0 | 0 | 0 | 0 | 1 | 1 | |

* Extirpated

**Appendix 3:** Species reaching their northern distributional limit in Sonora. Records consist of verified voucher specimens, published distributional records, and personal observations by the authors. Endemic species are not included. Superscripts denote placement on distributional map (Figure 8).
*Ambystoma rosaceum*[2] (UAZ 52139) Sierra El Pinito - Municipio de Nogales, *Pseudoeurycea bellii*[44] (UAZ 12138) Mesa del Campañero - Municipio de Yécora, *Anaxyrus mazatlanensis*[3] (UAZ 11827) South de Magdalena - Municipio de Santa Ana, *Ollotis occidentalis*[35] (UMMZ 78323) Sierra el Tigre - Municipio de Nacozari de

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Garcia, *Tlalocohyla smithii*[58] (UAZ 16070) West of Hermosillo - Municipio de Hermosillo, *Pachymedusa dacnicolor*[36] (UAZ 56714-PSV) South of Güisamopa –Municipio de Sahuaripa, *Smilisca baudinii*[51] (UAZ 45964) Río Yaqui crossing at Hwy 16 – Municipio de Soyopa, *Craugastor occidentalis*[13] (UAZ 46884) Vicinity Choquincahui - Municipio de Álamos, *Craugastor tarahumaraensis*[14] (UAZ 56716-PSV) West of Mesa del Campañero - Municipio de Yécora, *Leptodactylus melanonotus*[27] (UAZ 08213) Hermosillo - Municipio de Hermosillo (unconfirmed sight record near Moctezuma would extend the range 145 km east northeast, Jim Mead pers. obs.), *Syrrhophus interorbitalis*[54] (UAZ 56549-PSV) East of Yécora - Municipio de Yécora, *Lithobates forreri*[31] (Frost and Bagnara 1976) Vicam - Municipio de Bacum, *Lithobates magnaocularis*[32] (Frost and Bagnara 1976) Yécora - Municipio de Yécora, *Terrapene nelsoni*[55] (O'Brien et al., 2006) South of the Sierra los Arrieros - Municipio de Bacerac, *Kinosternon alamosae*[24] (J Rorabaugh pers obs.) Río Sonora crossing at Ures - Municipio de Ures, *Kinosternon integrum*[26] (UAZ 56547-PSV) West slope of Sierra El Chinito - Municipio de Baviácora, *Trachemys yaquia*[59] (UAZ 39965) Rio Bavispe near Huachinera - Municipio de Huachinera, *Coleonyx fasciatus*[11] (Grismer 1990) South of Cananea - Municipio de Cananea, *Phyllodactylus homolepidurus*[39] (UAZ 47990) Sierra Julio - Municipio de Caborca, *Phyllodactylus tuberculosus*[40] (UAZ 39970) Sierra El Chinito - Municipio de Baviácora, *Heloderma horridum*[22] (UAZ 56579-PSV) Sierra El Dátil - Municipio de Soyopa, *Ctenosaura macrolopha*[19] (UAZ 56701-PSV) Northwest of Benjamín Hill - Municipio de Benjamín Hill, *Phrynosoma orbiculare*[37] (UMMZ 78416) Sierra el Tigre - Municipio de Nacozari de Garcia, *Sceloporus lemosespinali*[49] (UTA 17365) Sierra San Luis - Municipio de Agua Prieta, *Sceloporus albiventris*[48] (UAZ 28236) South of Sierra La Laguna - Municipio de Yécora, *Sceloporus nelsoni*[50] (UAZ 56713-PSV) Sierra El Dátil - Municipio de Soyopa, *Urosaurus bicarinatus*[63] (UAZ 39969) South of Nuri - Municipio de Rosario Tesopaco, *Anolis nebulosus*[5] (Lieb 1981) East of Nácori Chico - Municipio de Nácori Chico, *Plestiodon parviauriculatus*[42] (UAZ 45083) East of Sierra El Chuchupate - Municipio de Yécora, *Aspidoscelis costata*[6] (LACM 121365-71) East of Nácori Chico - Municipio de Nácori Chico, *Boa constrictor*[8] (UAZ 42356) Southeast of Magdalena– Municipio de Magdalena de Kino, *Coluber mentovarius*[12] (UAZ 56736-PSV ) Northeast of Imuris - Municipio de Imuris, *Mastigodryas cliftoni*[33] (ASU 5848) Northeast of Álamos - Municipio de Álamos, *Drymobius margaritiferus*[20] (UAZ 42838) Vicinity of Álamos - Municipio de Álamos, *Geophis dugesii*[21] (UAZ 56421-PSV) Sierra El Chuchupate - Municipio de Yécora, *Imantodes gemmistratus*[23] (UAZ 56042-PSV) West of Mesa del Campañero - Municipio de Yécora, *Leptodeira punctata*[28] (CAS 93855) North of Obregón - Municipio de Cajeme, *Leptodeira splendida*[28] (UAZ 56548-PSV) East of Yécora - Municipio de Yécora, *Leptophis diplotropis*[30] (UCM 14165) Southeast of Cumpas - Municipio de Cumpas, *Pituophis deppei*[41] (Smith et al. 2005[a]) West of Yécora - Municipio de Yécora, *Pseudoficimia frontalis*[45] (UAZ 56368-PSV) East of the Sierra El Dátil - Municipio de Soyopa, *Salvadora bairdi*[47] (UAZ 44947) Sierra La Madera - Municipio de Moctezuma, *Procinura aemula*[43] (USNM 214124) Sierra El Dátil - Municipio de Soyopa, *Storeria storerioides*[52] (UAZ 32821) Sierra de Huachinera - Municipio de Huachinera, *Sympholis lippiens*[53] (UAZ 14428) Southeast of Hermosillo - Municipio de Hermosillo, *Thamnophis melanogaster*[56] (CAS 88444) Vicinity of Mesa Tres Rios - Municipio de Bacadéhuachi, *Thamnophis validus*[57] (UAZ 42848) Río Yaqui at Esperanza - Municipio de Cajeme, *Trimorphodon tau*[60] (BYUH 41160) East of Caborca - Municipio de Pitiquito, *Tropidodipsas repleta*[61] (MZFC 12057) Sierra El Dátil - Municipio de Soyopa, *Micrurus distans*[34] (UAZ 56584-PSV) West of Maycoba - Municipio de Yécora, *Agkistrodon bilineatus*[1] (UAZ 56577-PSV) South of Nuri - Municipio de Rosario Tesopaco, *Crotalus basiliscus*[15] (UAZ 45754) Vicinity of San Jose de Pimas - Municipio de La Colorada.

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**Appendix 4:** Species reaching their southern distributional limit in Sonora. Records consist of verified voucher specimens, published distributional records, and reliable personal observations. Endemic species are not included. Superscripts denote placement on distributional map (Figure 7).
*Anaxyrus retiformis*[4] (UAZ 47698) 32 km north of Guaymas – Municipio de Guaymas, *Lithobates yavapaiensis*[66] (Hale 2001) Sierra El Chuchupate - Municipio de Yécora, *Kinosternon arizonense*[25] (UAZ 56715-PSV) Sierra El Dátil - Municipio de Soyopa, *Aspidoscelis xanthonota*[65] (UAZ 57076-PSV) Sierra la Gloria – Municipio de Caborca, *Aspidoscelis sonorae*[7] (UAZ 21717) Vicinity de Mesa Tres Rios - Municipio de Bacadéhuachi, *Crotaphytus nebrius*[18] (AMNH 73715) Vicinity de Guaymas – Municipio de Guaymas, *Phrynosoma goodei*[38] (UAZ 13927) Punta Sargento - Municipio de Hermosillo, *Urosaurus graciosus*[64] (UAZ 38110) Vicinity de Desemboque - Municipio de Hermosillo, *Uma rufopunctata*[62] (CAS 53373) Bahia Tepoca - Municipio de Pitiquito, *Chionactis occipitalis*[9] (UAZ 32307) Vicinity de Desemboque - Municipio de Caborca, *Chionactis*

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*palarostris*[10] (LACM 51574) Vicinity de Guaymas – Municipio de Guaymas, *Crotalus cerastes*[16] (UAZ 27526) Vicinity de Bahia Kino - Municipio de Hermosillo, *Crotalus tigris*[17] (UAZ 27846) Vicinity de Masiaca – Municipio de Navojoa

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**Appendix 5:** Names having type localities originally designated as being in Sonora. Some localities are no longer within the present boundaries of the state and/or have been restricted to other states. Total numbers of names by group are: salamanders (1), anurans (2), turtles (5), lizards (37), and snakes (20). ST denotes type localities restricted by Smith and Taylor (1950). * Denotes species names (but not necessarily the genus-species combination) used in this publication. Numbers in brackets indicate names in the checklist of this paper to which the original names apply (as species, subspecies, or synonyms).

Salamanders (1): [1] *Pseudoeurycea belli sierraoccidentalis* Lowe, Jones, and Wright 1968: "ca. 11 mi (rd) E Santa Ana, on old road to Yécora, Sonora."

Anurans ( 2): [2] *Hyla affinis* Baird 1854: "northern Sonora;" restricted to Santa Rita Mts, Arizona (ST), and to Pena Blanca Springs, 10 miles northwest of Nogales, Santa Cruz Co. (Gorman 1960). [2] **Hyla arenicolor* Cope 1866 (replacement name for *Hyla affinis* Baird 1886): "northern Sonora"; restricted to Santa Rita Mts., Arizona (ST).

Turtles (5): [3]**Kinosternon alamosae* Berry and Legler: 1980: "Rancho Carrizal, 7.2 km N and 11.5 km west of Alamos, Sonora". [4] *Kinosternon flavescens stejnegeri* Hartwig 1938: Llano, Sonora (midway between Nogales and Hermosillo). [5] *Pseudemys scripta yaquia* Legler and Webb 1970: "Río Mayo, Conicarit, Sonora". [6] *Sphargis coriacea schlegelii* Garman 1884: tropical Pacific and Indian Ocean; restricted to Guaymas, Sonora (ST). [7] *Terrapene klauberi* Bogert 1943: Güirocoba, Sonora.

Lizards ( 36): [8] *Callisaurus draconoides brevipes* Bogert and Dorson 1942: Güirocoba, Sonora. [8] *Callisaurus inusitatus* Dickerson 1919: Tiburón Island, Sonora. [9] **Cnemidophorus bacatus* Van Denburgh and Slevin 1922: San Pedro Nolasco Island, Sonora. [10] **Cnemidophorus burti* Taylor 1938: La Posa, 10 miles northwest of Guaymas, Sonora. [11] *Cnemidophorus disparalis* Dickerson 1919: Tiburon Island, Sonora. [12] **Cnemidophorus opatae* Wright 1967:"5.5 miles (by road) south of Oputo, Sonora". [13] *Cnemidophorus martyris* Stejneger 1891: San Pedro Mártir Island, Gulf of California, Sonora[11] *Cnemidophorus puntilineatus* Dickerson 1919: Tiburon Island, Sonora. [14] *Cnemidophorus sacki barrancorum* Zweifel 1959:"Rancho Guirocoba, about 20 miles southeast of Álamos, México". [14] *Cnemidophorus sacki griseocephalus* Zweifel 1959: "11.4 miles east of Navojoa, Sonora, México". [11] *Cnemidophorus tesselatus aethiops* Cope "1998" (1900): Hermosillo, Sonora. [15] *Coleonyx variegatus sonoriense* Klauber 1945: "5 miles southeast of Hermosillo, Sonora". [16] **Crotaphytus dickersonae* Schmidt 1922: Tiburón Island, Sonora. [17] **Ctenosaura hemilopha macrolopha* Smith 1972: "La Posa, San Carlos Bay, 10 mi NW Guaymas, Sonora". [18] *Disps-saurus dorsalis sonoriense* Allen 1933: Hermosillo, Sonora. [19] **Eumeces parviauriculatus* Taylor 1933: Near Álamos, Sonora. [20] **Heloderma suspectum* Cope 1869: Sierra de la Union, "Sonora" [=Arizona]. [21] *Holbrookia thermophila* Barbour 1921: San José de Guaymas, Sonora [22] *Phrynosoma bufonium* Wiegmann 1828: unknown; restricted to Los Nogales, Sonora (ST). [23] **Phrynosoma ditmarsi* Stejneger 1906: State of Sonora, not far from the boundary of Arizona. [24] **Phrynosoma goodei* Stejneger 1893: "Coast deserts of the state of Sonora, Mexico". [25] *Phrynosoma regale* Girard *in* Wilkes 1858: Sierra de la Naris, near Zuñi, Sonora.[26] **Phyllodactylus homolepidurus* Smith 1935: five miles southwest of Hermosillo, Sonora. [26] *Phyllodactylus homolepidurus nolascoensis* Dixon 1964: "Isla San Pedro Nolasco, Sonora.[27] *Sauromalus townsendi* Dickerson 1919: Tiburón Island, Gulf of California. [28] **Sceloporus clarkii* Baird and Girard 1852: "Province of Sonora", restricted by Smith and Taylor (1950) to Santa Rita Mountains, Arizona. [29] **Sceloporus poinsettii* Baird and Girard 1854: "Rio San Pedro of the Rio Grande del Norte, and the Province of Sonora, restricted by Smith and Taylor (1950) to the former. [30] **Sceloporus undulatus virgatus* Smith 1939: Above Santa María Mine, Tigre Mountains, Sonora. [31] **Tapaya hernandesi* Girard 1858: New Mexico and Sonora, restricted by Cope 1900 to Santa Fe, New Mexico. [32] *Uma notata cowlesi* Heifetz 1941: Shores of Tepoca Bay, Sonora. [33] *Uta gularis* Cragin 1884: Guaymas, Sonora. [34] **Uta nolascensis* Van Denburgh and Slevin 1921: San Pedro Nolasco Island, Sonora. [33] *Uta ornata* var. *linearis* Baird 1859: Los Nogales, Sonora. 35 *Uta palmeri* Stejneger 1890: San Pedro Mártir Island, Sonora. [33] *Uta schottii* Baird 1858: "Sta. Madelina, Cal.-Mex. Boundary survey. [33] *Uta taylori* Smith 1935: Ten miles northwest of Guaymas, Sonora. [52] *Xantusia jaycolei* Bezy, Bezy, and Bolles 2008: Near Desemboque del Rio San Ignacio.

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Snakes ( 21): [36] *Caudisona atrox sonoraensis* Kennicott 1861: Sonora and vicinity; restricted to Guaymas, Sonora (SN). [37] **Chilomeniscus cinctus* Cope 1861: "near Guaymas, east coast of the Gulf of California", Sonora. [38] *Diadophis regalis* Baird and Girard 1853: Sonora,; restricted to Santa Magdalena (SN).[39] **Elaps euryxanthus* Kennicott 1850: Sonora [in USNM records]; restriction by Smith and Taylor (1945) to "Guaymas, Sonora," was rejected by Roze (1974). [40] *Eutaenia megalops* Kennicott 1850 Tucson, Arizona and Santa Magdalena Sonora, restricted by Smith and Taylor (1950b) to Tucson, Arizona. [41] *Ficimia desertorum* Taylor 1936: "about 12 kilometers northwest of Guaymas, Sonora". [42] *Lampropeltis getulus nigritus* Zweifel and Norris 1955: 30.6 road miles south of Hermosillo, Sonora. [43] *Leptodeira ephippiata* Smith and Tanner 1944: Agua Marin, 8.3 miles west-northwest of Álamos, Sonora. [44] **Masticophis bilineatus* Jan 1853: "Messico occid." restricted by Smith and Taylor (1950) to Guaymas, Sonora. [45] *Masticophis flagellum cingulum* Lowe and Woodin 1954: Moctezuma, Sonora. [39] *Micruroides euryxanthus australis* Zweifel and Norris 1955: "Guirocoba, Sonora,". [42] *Ophibolus splendida* Baird and Girard: "Sonora", restricted by Smith and Taylor (1950) to Santa Rita Mts., Arizona. [52] *Phyllorhynchus browni fortitus* Bogert and Oliver: "Álamos, Sonora". [53] *Phyllorhynchus decurtatus norrisi* Smith and Langebartel 1951: "45.1 miles south of Santa Ana, Sonora." [46] *Pseudoficimia hiltoni* Bogert and Oliver 1945: "Guirocoba, Sonora". [47] **Salvadora grahamiae* Baird and Girard 1853: Sonora [= southern Arizona; restricted by Schmidt 1053 to Huachuca Mts, Cochise Co., Arizona]. [48] **Sonora palarostris* Klauber 1937: "six miles south of Hermosillo, Sonora,". [49] **Sonora semiannulata* Baird and Girard 1853: Sonora, restricted by Stickel 1943 to Santa Rita Mts, Pima and Santa Cruz Counties, Arizona. [50] **Tantilla hobartsmithi* Taylor "1936' [1937]: 'near La Posa, 10 mi northwest of Guaymas," Sonora. [51] **Trimorphodon lambda* Cope 1886: "Guaymas, Sonora". **Crotalus tigris* Kennicott 1859: "Sierra Verde and Pozo Verde" [along Arizona-Sonora border].